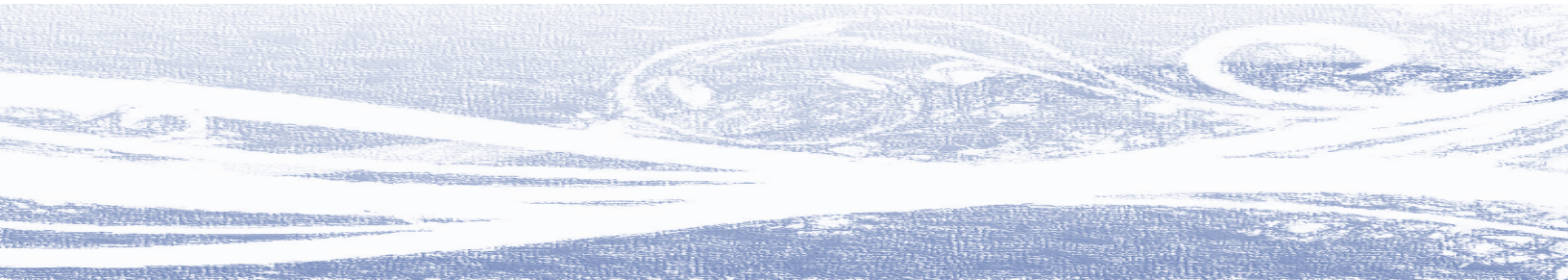

QRBD

QUARTERLY REVIEW OF BUSINESS DISCIPLINES

May 2019

Volume 6
Number 1



A JOURNAL OF INTERNATIONAL ACADEMY OF BUSINESS DISCIPLINES
SPONSORED BY UNIVERSITY OF NORTH FLORIDA
ISSN 2334-0169 (print)
ISSN 2329-5163 (online)

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QRBD - QUARTERLY REVIEW OF BUSINESS DISCIPLINES

A JOURNAL OF INTERNATIONAL ACADEMY OF BUSINESS DISCIPLINES

FROM THE EDITORS

This issue of *Quarterly Review of Business Disciplines* begins with the study of C. Brian Flynn, University of North Florida, and Alan G. Walker and Daniel J. Svyantek, Auburn University. This study identifies a number of constructs which are believed to be influential to leader performance. Theoretical and practical implications are discussed. The research of John Marinan and Steven Brown, Georgia Gwinnett College, examines servant leadership's influence on effective followership based upon follower-centric logic. It utilizes psychological safety as a mediator. The research of Tish Matuszek, Diane Bandow, and Roger C. Thornton, Troy University, delves into the tacit organizational factors that contribute to low representation of African Americans in executive positions.

Tung-Ching Lin, National Sun Yat-sen University, and Shuaifu Lin, University of Central Arkansas, develop and test a theoretical model to explain the factors that influence an employee's intention to use Enterprise 2.0 systems. Our final paper in this issue, written by Tamirat Abegaz, Cindi Smatt, Richelle Oakley, and Matthew Freeman, University of North Georgia, studies the effects of video game violence on humans and aims to assess whether there is a significant relationship between watching simulated violence and creation of a negative emotional state.

Margaret A. Goralski, *Quinnipiac University*, Editor-in Chief

Charles A. Lubbers, *University of South Dakota*, Associate Editor

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A JOURNAL OF INTERNATIONAL ACADEMY OF BUSINESS DISCIPLINES

VOLUME 6 NUMBER 1 MAY 2019

ISSN 2329-5163 (online)

ISSN 2334-0169 (print)

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PREDICTING LEADER PERFORMANCE: FIELD TEST OF AN INTEGRATED MODEL

C. Brian Flynn, University of North Florida

Alan G. Walker, Auburn University

Daniel J. Svyantek, Auburn University

ABSTRACT

In today's complex business environment, organizational success is more closely tied to leader performance than ever before because organizational leaders must deal with high levels of complexity in the process of communicating organizational goals and directives while simultaneously overseeing operations and communicating performance information. Given the complexity and importance of leaders to organizational success, it was surprising that very little research has focused on developing integrated predictive models of general leader performance. Such models could provide guidance for both future research and practical guidance in selecting and developing leaders. As such, this study identified a number of constructs believed to be influential to leader performance, including cognitive ability, personality, motivation, and leader skills, then tested the applicability of those constructs to leader outcomes using a model of general leader performance. Support was found for the relationship between cognitive ability and performance, as well as the mediating effects of leader skills to the cognitive ability to performance relationship. Theoretical and practical implications are discussed for these findings, as well as rationale for why other relationships were not detected.

Keywords: Leader, Leadership, Performance, Fluid Intelligence, Psychological Capital, Core self-evaluations

INTRODUCTION

In today's complex business environment, effective leaders are crucial for maximizing organizational effectiveness (Hansen & Wernerfelt, 1989; Reay, Golden-Biddle, & Germann, 2006; Rubin & Dierdorff, 2011; Sadler-Smith, Hampson, Chaston, & Badger, 2003). Indeed, virtually all organizations can benefit from effective leaders because they bring unique qualities, skills, and characteristics to organizations that create and maintain competitive advantage (Fulmer, Gerhart, & Scott, 2003; Luthans & Youssef, 2004; Ren & Guo, 2011). In the end, the success of any organization is usually tied to the effectiveness of its leaders and thus the identification, selection, and development of high performing leaders should be of paramount concern to organizational leaders (Longenecker & Fink, 2001).

Given the plethora of leadership research, one might expect that scholars and practitioners alike have reached a consensus on what leadership is and what makes a good leader. Unfortunately, rather than consensus we have a plethora of theories, models, and messages, sometimes in conflict

with each other, about leadership (Eberly, Johnson, Hernandez, & Avolio, 2013). More recently, the literature on leadership has focused on different approaches to leadership, such as leader behaviors (Yukl, 2012), transformational leadership (Bass & Avolio, 1994), servant leadership (Liden, Panaccio, Meuser, Hu, and Wayne, 2014), and leader-member exchange (Graen & Uhl-Bien, 1995; Dulebohn, Bommer, Liden, Brouer, & Ferris, 2012). All of these approaches focus either on certain individual characteristics or certain behavior patterns and the implications of those behavior patterns on leader outcomes (Mumford, Zaccaro, Harding, Jacobs, & Fleishman, 2000).

From a theoretical standpoint, the research on different approaches, or styles, of leadership encourage development of the field and is beneficial to the academic community. From a practical standpoint, we may be missing the forest for the trees, so to speak. Many organizations may lack the individuals with the capacity or interest to adopt or implement these various styles of leadership, but that does not mean that the organizations do not need leaders, and consequently useful models for leadership identification and development. What may be of greater value to organizations in these circumstances is a model of leadership that can serve as a general framework for leader selection and development.

Mumford et al. (2000) developed a general leadership model designed around capabilities, but it has not seen widespread application. Therefore, the fundamental purpose of this study was to apply Mumford et al.'s model of leader capability in a field study. This study contributes to theory and practice in a number of ways. Theoretically, while a number of studies have examined predictors of leader performance independent from one another, this study integrates several of these components into a single framework under an established theoretical model. Investigating components together provides the opportunity to examine the effects of the combined elements, yielding better understanding of the possible interactive effects of the various components. Additionally, by integrating several predictors of performance into a more complete model, this study contributes to practice by providing a better understanding of useful predictors for selecting leaders with the highest likelihood of success. The identification of leaders that possess the qualities most likely to maximize performance is of particular importance to practitioners for both selection and development purposes.

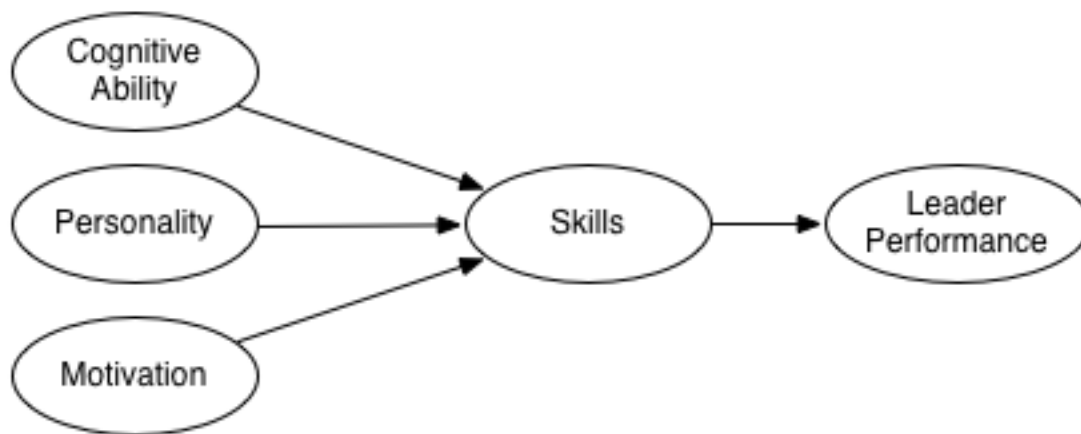
THEORY AND HYPOTHESIS

An ever-changing work environment, coupled with changing skill sets and flattening organizations (Semadar, Robins, & Ferris, 2006), particularly in the service sector, has made the work of leaders more diverse and complex than ever. Leaders are now expected to perform duties that are more cognitively demanding, such as coaching, motivating and inspiring employees, and coordinating teamwork (Hogan, Curphy, & Hogan, 1994) in increasingly complex and dynamic environments. Furthermore, leaders are expected to do these duties in a fragmented and hectic environment requiring the ability to shift from one person to another and from one subject to another on a continuous basis (Mintzberg, 1973; Sayles, 1979). In essence, a framework is needed that identifies the traits and skills needed for effective leadership. A framework of this nature would (a) combine the various components of leader performance into an integrated whole, (b) provide guidance for future research, and (c) identify useable tools for practitioners.

Mumford, Zaccaro, Harding, Jacobs, and Fleishman (2000) proposed a model based on leader capability that seeks to recognize the increased complexity of leadership roles and identify the characteristics leaders need and can develop to be effective leaders. The model begins by identifying the traits that influence leader performance. These include general and crystallized cognitive abilities, personality, and motivation. These traits are antecedents to skill development, including problem solving and social judgment skills, and knowledge required to be an effective leader. Mumford et al. argue that with these skills, leaders solve problems, which in turn leads to leader performance. Two moderators influence various aspects of this model. The first is career experiences, which moderates the development of individual characteristics, particularly crystallized abilities, and skill development. As leaders acquire more experience they develop greater knowledge and social skills that enable them to solve problems more effectively. The second moderator is environmental influences. What occurs in the environment moderates all facets of the model; the environment can enhance or inhibit cognitive and skill development, as well as problem solving, which in turn leads to enhanced or inhibited leader performance.

After proposing the model, Mumford and colleagues conducted a number of studies to support the inclusion of the components in the model (e.g., Zaccaro, Mumford, Connelly, Marks, & Gilbert, 2000; Connelly, Gilbert, Zaccaro, Threlfall, Marks, & Mumford, 2000; Mumford, Marks, Connelly, Zaccaro, & Reiter-Palmon, 2000; Mumford, Zaccaro, Johnson, Diana, Gilbert, & Threlfall, 2000; Mumford, Zaccaro, Connelly, & Marks, 2000), but no field test of the model was performed. In an effort to provide some validation to the model, this study was conducted using a modified version of the Mumford et al. (2000) model. The tested model (see Figure 1) has at its foundation the constructs of cognitive ability, personality, and motivation. That is, as proposed, these serve as the primary predictors of skill development. Skills, in turn, are critical in predicting leader performance.

Figure 1. General Model



Cognitive Ability

Cognitive ability is an ability to process complex information of any type, or in other words, to deal effectively with complexity (Gottfredson, 2002), which as noted earlier, is a critical aspect of leader work. A large body of evidence supports the influential role of cognitive ability as a

predictor of both current and future job performance (Hunter & Hunter, 1984; Ree & Carretta, 2002; Schmidt & Hunter, 1998). The predictive validity of cognitive ability also increases as the complexity of the job increases, as Hunter (1983) demonstrated in a test of cognitive ability against 515 occupations classified as either low ($r = .40$), medium ($r = .51$), or high ($r = .58$) complexity jobs. In essence, no single non-cognitive trait or interest predicts core performance better (Furnham, 2008). Individuals high in cognitive ability learn more and learn faster, and unlike other characteristics, such as job experience, the influence of cognitive ability does not decrease over time (Gottfredson, 2002).

Hypothesis 1: Cognitive ability will positively relate to leader performance.

Personality

Research on personality and performance seem to both contradict and support the assertion that personality is related to performance. A number of studies (Dudley, Orvis, Lebiecki, & Cortina, 2006; Hogan & Holland, 2003; Mount, Barrick, & Stewart, 1998; Oh & Berry, 2009) have found significant relationships between various dimensions of personality and job performance, suggesting that personality matters. Other scholars, however, suggest that the effect sizes are often small (Hurtz & Donovan, 2000; Mount, Barrick, & Stewart, 1998), suggesting that personality may have little bearing on performance.

Direct effects of personality on job performance may be misleading, however, for two reasons. First, isolated traits may not adequately capture enough variance of the entire conceptual space in personality to be valid predictors of job performance. Second, many traits have significant overlap with other traits. For these reasons, the use of a latent model higher order construct may capture more of the personality-related conceptual space resulting in unifying constructs that better explain and predict job performance (Johnson, Rosen, & Levy, 2008).

A good example of a higher order personality trait, and the one used in this study, is the trait of core self-evaluations (CSE; Judge, Locke, & Durham, 1997). CSE is comprised of four facets: self-efficacy, self-esteem, locus of control, and neuroticism. As a construct, CSE is designed to reflect an appraisal of one's self-worth and beliefs in their abilities to succeed (Judge, 2009). Each of these facets has significant bearing on the work of a leader. A leader high in self-efficacy (i.e., feelings of ability to be successful) combined with high self-esteem (i.e., feelings of self-worth) may be more likely to feel confident in their abilities to handle the complexities inherent in a leader's work. A leader low in neuroticism (i.e., free from anxiety, depression, anger, emotional instability, insecurity, nervousness, fearfulness, or apprehension), might develop better relationships faster and be more effective at garnering the trust, cooperation, and support of others. A leader high in internal locus of control might be more likely to take personal responsibility for the outcomes over which they are responsible. In general, we would expect that leaders high in CSE would have greater levels of effectiveness than leaders would with lower levels of CSE. Evidence does seem to support these expectations. CSE has been shown to have a direct effect on higher task performance in a laboratory setting, and higher job performance among sales representatives (Bono & Judge, 2003), though this linkage is modest ($r = .23$).

Hypothesis 2: Core self-evaluations (CSE) will positively relate to leader performance.

Motivation

A third predictor of leader performance involves the commitment of the leader to perform his or her required duties. In other words, how motivated is an individual to fulfill the responsibilities of a leader? Leaders are consistently confronted with a number of discretionary activities in the course of their duties suggesting that intrinsic motivation to fulfill their responsibilities will result in higher levels of effort and persistence (Meyer, Becker, & Vandenberghe, 2004). Traits, in particular, can be a significant source of intrinsic motivation, but traits are by definition generally stable and difficult to change. If organizations must rely on individuals possessing adequate levels of a motivational trait to fill leadership positions, they may be severely limited in the selection options. Other psychological characteristics, however, are more “state-like.” That is, they are relatively malleable and open to development (Luthans, Avolio, Avey, & Norman, 2007). These state-based motivational constructs may be more useful to organizations because these constructs can be cultivated in most leaders, including those that do not possess especially high levels of motivational traits.

Psychological Capital (PsyCap; Luthans, Luthans, & Luthans, 2004) is such a state-based construct of motivational propensity originating in the positive organizational behavior (POB) movement. According to Luthans, Youssef, and Avolio (2007), this construct is composed of four facets: (a) self-efficacy, having the confidence to take on challenging tasks and put in the effort to succeed; (b) optimism, believing one can succeed now and in the future; (c) hope, having the will to succeed and the ability to identify, clarify, and pursue the way to success; and (d) resiliency, the ability to bounce back from adversity to attain success. PsyCap thus “represents one’s positive appraisal of circumstances and probability for success based on motivated effort and perseverance” (Luthans et al., 2007, p. 551).

Previous research has linked each of the four facets to positive job attitudes and performance (Gist & Mitchell, 1992; Luthans, Avolio, Walumbwa, & Li, 2005; Murphy, 1992). Additionally, as a latent model higher order construct, PsyCap has demonstrated both theoretically and empirically that it predicts job performance better than each of the four independent facets of which it is comprised (Avey, Luthans, Smith, & Palmer, 2010). Initial evidence also suggests that the construct of PsyCap is distinct from trait-based constructs such as core self-evaluations and the Big Five personality traits (Luthans et al., 2007), and because PsyCap is conceptualized to be state-like and malleable, it is presumed to be developable (Stajkovic, 2006; Walumbwa, Peterson, Avolio, & Hartnell, 2010).

The potential practicality and intuitive appeal of PsyCap is apparent given that leaders are often assigned a variety of tasks that may have a high risk of failure. Even leaders high in CSE may be daunted in the face of some assignments. It’s proposed that leaders with high levels of PsyCap will be rated as better performers due to stronger beliefs about their abilities to complete the task (self-efficacy), having a vision of completion (hope), approaching their responsibilities from a positive perspective (optimism), and when things go awry, bouncing back more quickly (resiliency).

Hypotheses 3: Psychological Capital will positively relate to leader performance.

Leader Skills

According to Mumford et al. (2000), leader skills will mediate the relationship between leader traits and motivation and leader performance. Leader skills are defined by Mumford, Peterson, and Childs (1999) as procedures for acquiring and working with information. These skills are different from traits such as personality or core self-evaluations in that they are not necessarily stable but depend on experience and practice. Of particular value for leaders are skills necessary for accomplishing work *through* others, which is the essence of a leader's work.

In a qualitative study, Whetten and Cameron (2010) identified 402 leaders considered highly effective performers and interviewed them to find out what skills contributed to their success. Their analysis revealed 10 critical skills cited most frequently. These 10 skills include verbal communication, managing time and personal stress, managing individual decisions, recognizing, defining, and solving problems, motivating others, delegating, setting goals and articulating a vision, self-awareness, building effective teams, and managing conflict.

These findings have significant overlap with the skills identified by Mumford, Campion, and Morgeson (2007). Their findings supported a four-factor skill structure consisting of cognitive skills (i.e., speaking, writing, critical thinking, etc.), interpersonal skills (i.e., social perceptiveness, coordination, etc.), business skills (i.e., managing personnel, financial, and material resources), and strategic skills (i.e., visioning, problem identification, solution appraisal, etc.). These are the skills that are most useful to leaders in dealing with the complexities of leader work and which are necessary for accomplishing work through others.

Hypothesis 4: Leader skills will mediate the relationship between leader characteristics and leader performance.

METHODOLOGY

Research Setting and Procedures

The data were collected from a facilities maintenance organization for a large university in the southeastern United States. Online surveys were administered to two constituencies within each organization: (a) leaders (ratee), and (b) the leaders' supervisors (boss). The manager's name was requested of all survey respondents and used to provide a link between the responses of the manager and the manager's boss. At the conclusion of the data collection, all names were replaced with a unique numerical identifier, yielding the data completely anonymous. The resulting sample consisted of a range of leaders including assistant supervisors, supervisors, assistant managers, managers, assistant directors, and directors.

Leaders completed measures of cognitive ability, core self-evaluations, and psychological capital. Given the nature of these constructs, self-report data were deemed the logical source. The leader's supervisors provided ratings of the leader's skills. Since research suggests that self-reports tend to be inflated in comparison to supervisory ratings (Heidemeier & Moser, 2009), acquiring a skill rating from the ratee's manager reduced concerns of inflated self-ratings. Based on similar logic, subordinates were asked to provide a measure of the manager's performance. Certain behaviors

are more readily observed by the subordinates, and thus subordinates constitute an important source for rating relevant managerial performance behaviors (Mount 1984; Tsui 1988).

Sample

Survey invitations were extended to all leaders who fit the leader criteria ($n = 70$), the leaders' bosses, and the leaders' subordinates. After compiling the boss and subordinate ratings for each manager, and eliminating responses with incomplete data, the sample consisted of 65 leader responses. Approximately 56% of the responses came from assistant supervisors or supervisors. Most leader respondents were male (87.7%), and most were 41 years old or older (86.2%). Many of the leaders responding had a 4-year (Bachelor's) degree or higher (49.2%), had been with their organization for 11 or more years (60.0%) and had been in their position 6 or more years (89.2%).

Measures

Cognitive Ability. Cognitive ability was measured using a short version of the Raven's Advanced Progressive Matrices (APM; Raven, Court, & Raven, 1978) outlined by Bors and Stokes' (1998). The Raven's APM is designed to measure the ability of respondents to solve problems and handle complexity through progressively more complex puzzles (Carpenter, Just, & Shell, 1990; Raven, 2000). The full version consists of 12 practice puzzles and 36 scored puzzles and takes approximately 40 minutes, but due to time constraints, a short version was used (Bors & Stokes, 1998) consisting of 12-items with two practice puzzles. In developing the short form of the test, Bors and Stokes obtained a correlation of .92 with the full-length APM and an internal consistency (as measured by Cronbach's alpha) of .73. The test for this study was administered by providing each manager with a test booklet consisting of two practice puzzles and 12 scored puzzles. Scores were obtained by calculating the total number of correct responses on each of the 12 scored puzzles, with a higher score indicative of greater cognitive ability. Coefficient alpha for the measure as used in this study was .80 ($M = 5.78$; $SD = 3.1$).

Core self-evaluations. CSE was measured using the 12-item Core Self-evaluations Scale (CSES; Judge, Erez, Bono, & Thoresen, 2003). This scale has shown internal consistencies across a number of studies in the range of .80-.84 (Judge, Van Vianen, & De Pater, 2004; Kacmar, Collins, Harris, & Judge, 2009; Stumpp, Hulsheger, Muck, & Maier, 2009). Each item was rated using a 6-point Likert type scale (1 = Strongly Disagree, 6 = Strongly Agree). Coefficient alpha for this study was .73 ($M = 4.67$; $SD = .54$).

Psychological capital. The 24-item Psychological Capital Questionnaire (PCQ-24; Luthans et al., 2007) was utilized for this study. Luthans et al. (2007) found internal consistencies across multiple studies to be greater than .85, and reliabilities for other studies have ranged from .93 (Avey et al., 2010) to .98 (Peterson, Luthans, Avolio, Walumbwa, & Zhang, 2011). Each item was rated using a 6-point Likert type scale (1=Strongly Disagree, 6=Strongly Agree). Coefficient alpha for this study was .89. ($M = 4.94$; $SD = .50$).

Leader skills. The ratings for leader skills were reported by the manager's supervisor using 20 items selected from the generalized work skills questionnaire provided by the U.S. Department of Labor for the Occupational Information Network (O*NET; https://onet.rti.org/pdf/OE_Skills_Questionnaire.pdf). The original version of this scale was a 46-

item measure developed by Mumford, Peterson, and Childs (1999) that measures both the level of the particular skill needed for the job, and the importance of that skill to the job. To determine which of the skills were related to leadership, Mumford et al. (2007) factor-analyzed the 46 items and determined that leadership skills were best represented by a four-factor structure consisting of 21 of the 46 items. These items were grouped into four factors: cognitive skills ($\alpha = .90$), interpersonal skills ($\alpha = .84$), business skills ($\alpha = .75$), and strategic skills ($\alpha = .91$).

In 2000, the scale was updated and revised resulting in a 35-item measure currently in use (Hubbard, McCloy, Campbell, Nottingham, Lewis, Rivkin, & Levine, 2000). The revised version of the questionnaire merged six of the original 46 skills identified by Mumford et al. into a single skill (complex problem solving), eliminated several outdated skills previously identified, and added a number of other leader related skills not previously included. A factor analysis of the revised edition of the scale identifying leadership skills was not available. Therefore, 15 skills were selected identified by Mumford et al. that remained in the revised version of the questionnaire, the one skill that was created by merging six skills used in the Mumford et al. study (complex problem solving), and four others from the new questionnaire that seem particularly relevant to leader work based on previous research (i.e., time management, quality control analysis, judgment and decision-making, systems analysis; Boyatzis, 1982; Campbell, 1970; Mintzberg, 1994). The scale is designed to assess the overall level of leader skills as perceived by the leader's boss. The leaders' bosses' were given the statement, "[Name of manager] does very well at . . ." followed by the 20 statements reflecting the skills selected, such as "Talking to others to convey information effectively" or "Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems." Each item was rated on a 7-point Likert type scale (0=Not Sure/Does Not Apply; 1=Strongly Disagree; 2=Disagree; 3=Somewhat Disagree; 4=Somewhat Agree; 5=Agree; 6=Strongly Agree). Scores were calculated by taking the average of the scores for all 20 items. Coefficient alpha for this study was .94 ($M = 4.92$; $SD = .72$).

Leader performance. Leader performance was measured using a 12-item measure that focuses on leader behaviors observable by subordinates. Eight items of this scale were composed by Mount (1984) based on items taken from the Management Position Description Questionnaire (MPDQ) by Tornow and Pinto (1976) and are related to behaviors specific to leadership positions. An additional four were added to capture overall impressions of leader capability. Subordinates were given the leader's name followed by the 12 items, and each item was rated on a 6-point Likert type scale (0=Not Sure/Does Not Apply; 1=Consistently performs way below expectations; 2=Consistently performs below expectations; 3=Consistently performs at expectations; 4=Consistently performs above expectations; 5=Consistently performs way above expectations). Coefficient alpha for this measure was .90 ($M = 3.60$; $SD = .44$).

Method of Analysis

To test the hypotheses, the model was analyzed using linear regression in SPSS 23 (*IBM SPSS Statistics for Windows, Version 23.0*, 2015). A common approach of mediation analysis was used (Baron & Kenny, 1986), consisting of several steps. In step one, a relationship between the independent variables (Cognitive ability, CSE, and PsyCap) and outcome variable (leader performance) is assessed; step two consists of assessing the relationship between the independent variables and the mediator; step three consists of assessing the relationship between the mediator and outcome variable. If the statistical significance of the relationships between the independent

variables and dependent variable are reduced to insignificance when the mediator variable is included in the model, then full mediation is assumed to have occurred. Initial testing indicated that none of the respondent demographic characteristics (i.e., gender, job tenure, etc.) were related to leader performance and were thus excluded.

RESULTS

Table 1 shows the means, standard deviations, and intercorrelations among the study variables at each level. Several of the bivariate correlation coefficients are statistically significant, but the actual correlation coefficients are low to moderate. Significant correlation coefficients among the independent variables are often assumed to suggest the possibility of multicollinearity, but according to Kline (2005) multicollinearity is not an issue unless the coefficients exceed .85. Core self-evaluations and Psychological Capital share more variance than the other correlated variables, ($r^2 = .38$), but previous research suggests that the construct of Psychological Capital is distinct from Core self-evaluations (Luthans et al., 2007), so this was deemed sufficient to proceed with the analysis.

Table 1

Means, standard deviations, correlations, and reliabilities for study variables

Variable	Mean	s.d.	1	2	3	4	5
1. Cognitive Ability	5.78	3.12	(.80)				
2. Core self-evaluations	4.67	0.54	.25*	(.73)			
3. Psychological Capital	4.94	0.5	.35**	.62**	(.890)		
4. Leader Skills	4.92	0.72	.38***	-0.17	-0.07	(.94)	
5. Leader Performance	3.60	0.44	.21	-0.24	-0.04	.47**	(.92)

Note. $N = 65$; Cronbach's alphas appear on the diagonal in parentheses.

** $p < .01$, * $p < .05$. Two tailed test.

Hypothesis Testing

Table 2 presents the results of the hypotheses tests. Hypothesis 1 states that cognitive ability is positively related to leader performance. The beta coefficient for cognitive ability in the regression was statistically significant ($\beta = 0.04$, $p < .05$), so hypothesis 1 was supported.

Hypothesis 2 stated that CSE would be positively related to leader performance. The beta coefficient for CSE in the regression was statistically significant ($\beta = -.28$, $p < .05$), but in the opposite direction hypothesized. Thus, hypothesis 2 was not supported and CSE was removed from the model.

Hypothesis 3 stated that PsyCap would be positively related to leader performance. The beta coefficient for PsyCap in the regression was not statistically significant ($\beta = 0.07$, $p > .05$), so hypothesis 3 was not supported and PsyCap was removed from the model.

Hypothesis 4 stated that leader skills would mediate the relationship between the independent variables (cognitive ability, CSE, and PsyCap) and leader performance. In order to test the

mediation effects, the relationship between cognitive ability and leader skills was assessed. The beta coefficient for cognitive ability in the regression was statistically significant ($\beta = 0.10, p < .01$), so leader skills was inserted into the model as a mediator. When the leader skills variable was inserted, the statistically significant relationship between cognitive ability and leader performance dissipates, and leader skills was a significant predictor of leader performance ($\beta = 0.24, p < .01$). These results suggest that leader skills fully mediate the relationship between cognitive ability and leader performance. Thus, Hypothesis 4 was supported, though not in full because CSE and PsyCap were omitted from the model.

Table 2

Linear regression results for the proposed model

	Leader Performance	
	<i>Coeff.</i>	<i>SE</i>
Direct Effects		
Intercept, β_0	4.36**	0.55
Cognitive Ability, β_1	0.04*	0.02
Core self-evaluations (CSE), β_2	-0.28*	0.12
Psychological Capital (PsyCap), β_3	0.07	0.14
Mediation Model		
Intercept, β_0	2.21**	0.34
Cognitive Ability, β_1	0.01	0.02
Leader skills (ManSkills), β_4	0.24**	0.08

Note. $N = 65$.

** $p < .01$, * $p < .05$. Two tailed test.

DISCUSSION

Application and future research

The purpose of this study was to test a general model of leadership based on capability by identifying predictors that may be useful in predicting leader performance utilizing a theoretical framework proposed by Mumford et al. (2000). This framework suggests that a leader's cognitive ability, personality, and motivation predict skill development, which in turn predicts problem solving ability, which leads to higher leader performance. Previous empirical research supported the logic of this model, and this study is a response to calls for more research on models of this nature (Yukl, 2012).

In general, the findings lend some support to the proposed model, but with some exceptions. For hypothesis one, statistical support was found for the prediction that cognitive ability will predict performance, and this relationship is fully mediated by ratings of leader skills. These findings are not necessarily surprising because they are in line with previous research (Connelly et al., 2000).

These results support the idea that a leader's cognitive ability and subsequent skill development are important to deal with complex environments, and thus should be one criteria for leader selection and development.

What may be of greater interest is what was not found. The model predicts that personality and motivation will predict the development of leader skills which will then predict performance, but neither hypothesis was supported. In regards to personality, this prediction was statistically supported but in the opposite direction of that proposed. In essence, within this sample, as self-ratings of CSE went up, ratings of leader skills and performance went down. This finding ran contrary to what was predicted in the model. In trying to understand this finding a number of possibilities were explored, but no empirical explanation was found. It was concluded, therefore, that these findings may be reflective of the role played by the person-situation interaction on the performance of organizational members.

A recent study by Judge and Zapata (2015) lends credibility to this line of thinking. They found that in strong situations (i.e., work contexts with high levels of structure, less variety in day to day activities, less autonomy in decision making, and strong penalties for negative outcomes), personality is attenuated. In these contexts, the organizational structure demands certain behaviors and therefore personality does not have a chance to manifest itself. In fact, Judge and Zapata suggested that when the situation strength is strong and performance is based on outcomes, personality will negatively predict job performance validities. In the case of this study, the organization in which the data were collected was highly mechanistic (i.e., high degree of centralization, work specialization, and highly formalized), meaning leaders operated in a context of strong situational strength, and leader performance was measured as a function of outcomes, so if Judge and Zapata are correct, this would suggest personality would be a negative predictor of performance, and indeed that is what occurred in this study. This suggests that personality may only be relevant when situations are weak, such as in dynamic work contexts where less structure and formalization are present. Personality may be less important in organizations where the structure dictates specific behaviors.

The model also predicted that leader motivation would lead to better ratings of leader performance, but this was not supported by the data from this sample, nor was motivation predictive of ratings of leader skills. The lack of significance for motivation as a predictor of leader performance may also be related to the situational strength of the work context. One can imagine that when the situation is strong, high levels of motivation may not be as critical to leader success. It may also be that leader motivation, while possibly important, may not be readily observable or may be subsumed in other aspects of the individual. For example, psychological capital was significantly correlated with cognitive ability, which may suggest that those higher in cognitive ability may be more motivated to develop leader skills and perform better.

In sum, the proposed model may be a starting point for the development of a general model of leadership, but this study suggests that several refinements will need to be made in order to make it a viable model for application. For example, the model specifically suggests work experience would be an overall influence. While this may be true, job tenure, the measure used in this study to represent work experience, had no relationship to job performance and so it was not included in the analysis. It may be that work experience matters, but is captured in cognitive ability and leader

skills, thus there is no need to separate it for theoretical and modelling purposes. This study also suggests that situational strength may be an important determinant of leader effectiveness, and should be incorporated into the model. In strong situations, the importance of the leader diminishes, and thus situation strength probably needs greater emphasis.

Limitations

As is the norm in this type of research, a limitation of this study is the possibility of common method and rater bias. Common rater bias was curtailed to some degree by collecting the independent variables from the manager and the manager's boss, and collecting the dependent variable from leader subordinates. This methodology distributed the chance for rater bias across multiple parties and reduced it at any one respondent group. The data was, however, self-report data and is thus subject to common method bias. It was felt, however, that common method bias was unavoidable due to the study variables being self-report constructs that could not be adequately assessed by any other source. Further, given the voluntary nature and anonymity of study participants, there was no reason to believe that respondents were untruthful (Conway & Lance, 2010).

A second limitation is the possibility that the sample size is inadequate to achieve sufficient power. Given the nature of the variables, and the methods in which they were collected (specifically the cognitive ability variable), it was necessary to limit data collection to one organization. Replication in a much larger organization would prove beneficial for future research.

A third limitation may be related to the choice of variables, specifically the measure of core self-evaluations. It may be that the model did not measure the appropriate individual difference variable impacting performance. The Big Five dimension of neuroticism is known to have a curvilinear relationship with performance on a cognitive performance task by middle managers (Beckmann, Beckmann, Minbashian, & Birney, 2013). It may be that this study needed to use other individual difference variables to better assess the relationship between general mental ability, personality, and performance.

CONCLUSION

In sum, leader performance is a critical factor contributing to organizational performance and success and should be of concern to both academic researchers and human resource professionals engaged in the selection and development of leaders (Carroll & Gillen, 1987). In particular, changes from a manufacturing to service economy are requiring leaders to have increasing levels of capability in order to be effective (Hogan et al., 1994). Leaders that lack the cognitive ability to work in the leader environment of today's organizations are less likely to be successful. Further, even with adequate cognitive ability, lack of motivation and skills may handicap overall effectiveness. Thus, having a more integrated view of overall leader performance may be helpful both at the individual level (by allowing them to be successful through good fit, or avoiding unnecessary failure due to poor fit) and the organization level (by obtaining a competent and effective leader).

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THE RELATIONSHIP BETWEEN SERVANT LEADERSHIP, PSYCHOLOGICAL SAFETY AND EFFECTIVE FOLLOWERSHIP

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ABSTRACT

Servant leadership has become more significant in organizational research since Greenleaf's (1970) pioneering work on the subject. It has grown in prominence due to empirical evidence demonstrating it represents highly effective leadership practice. Some of the core aspects of Greenleaf's initial definition, including listening, empathy, awareness, and commitment to growth of the individual are conceptually related to psychological safety. The servant leadership aspect of conceptualization, when modeled to employees, serves as the impetus for their own development of cognitive capacities and independent thinking behaviors. Based upon this follower-centric logic, this research examines servant leadership's influence on effective followership through psychological safety as a mediator. Participants consist of 416 working employees in various industries and organizations. Three hypotheses are offered and supported, using structural equation modeling. Psychological safety was found to mediate the relationship between servant leadership and effective followership. Practical and theoretical implications are discussed, along with study limitations and future research opportunities.

Keywords: Servant leadership, psychological safety, effective followership

INTRODUCTION

This research focuses on the contribution of servant leadership to effective followership, as defined by Kelley (1992). We posit that, a servant leader's focus on serving a subordinate's needs will engender feelings of safety and comfort which will, in turn, provide a foundation upon which a subordinate's self-managing, self-reliant behavior will flourish. Thus, we will examine the following specific hypotheses:

Hypothesis 1: There is a positive relationship between servant leadership and psychological safety.

Hypothesis 2: There is a positive relationship between psychological safety and effective followership.

Hypothesis 3: There is an indirect positive relationship between servant leadership on effective followership as mediated by the variable of psychological safety.

CONCEPTUALIZING EFFECTIVE FOLLOWERSHIP

Effective followership is an under-rated cornerstone of effective organizations. Effective followership consists of self-management and self-reliance, commitment to the organization's purpose, improving one's own performance and competencies, courageous honesty, and personal credibility (Kelley, 1992). Yet much of the prevailing wisdom underplays the role of followership. Kellerman (2008) argues that “Followers are subordinates who have less power, authority, and influence than do their superiors, and who therefore usually, but not invariably, fall into line.” Most people, particularly in organizations, are more often followers than leaders, but until recently, the role of the follower has not been considered an inherently valuable position, or a role with a specialized set of skills, motivations, and the power to enhance organizational potential (Kelley, 1988). There is a more recent and positive line of thinking on the concept of followership. Effective followers can shape productive leadership behavior just as effective leaders develop employees into good followers (Suda, 2013). For any project or organization to succeed, there must be people who willingly and effectively follow, just as there must be those who willingly and effectively lead. Leadership and followership are fundamental roles that individuals shift into and out of under various conditions (Suda, 2013).

Many of the competencies that are needed in leaders are the same qualities needed in effective followers. In addition to possessing initiative, independence, commitment to common goals, and courage, a follower can provide enthusiastic support of a leader, but not to the extent that a follower fails to challenge a leader who is unethical or threatens the values or objectives of the organization. Ineffective followers are as much to blame for poor performance, ethical and legal lapses within organizations as are poor and unethical leaders (Suda, 2013).

Kelley defines five basic styles of follower: the sheep, the yes people, the alienated, the pragmatics, and the star followers. Each exhibits a different degree of independent thinking and organizational engagement and differs in their motivations. The following is a basic assessment of each follower type according to Kelley (2008).

The sheep are passive in their thinking and engagement and are motivated by their leader rather than themselves. The yes-people also allow their leader to do most of the thinking and acting for them but are generally positive and always on the leader's side. In contrast, the alienated are predominantly negative but think more independently. They think for themselves but do not contribute to the positive direction of the organization. The pragmatic exhibits a minimal level of independent thinking and engagement as they are more willing to exert energy and get involved when they see where the direction of the situation is headed. The pragmatics lack in demonstrating critical thinking and are motivated by maintaining the status quo. Finally, the star followers think for themselves, have positive energy, and are actively engaged. They agree with and challenge their leaders (Kelley, 2008).

Unfortunately, many followers fall into the first four categories. Gallup's survey of about 150,000 full and part-time employees in 2012 indicates that 18% of employees could be characterized as “actively disengaged.” These employees take more sick days, monopolize their managers' time, and perhaps more significantly, spread their discontent among the staff (Gallup, 2013). It is a significant problem.

The topic of followership is directly tied to the subject of employee engagement. Employee engagement as a measure of performance and management strategies to increase engagement have become hot topics since the original Gallup organization research was published (Suda, 2013). The Gallup organization defined employee engagement as “an employee's involvement with, commitment to, and satisfaction with work” (Suda, 2013). Research conducted in the past decade has shown that employee engagement has declined significantly in most industries, with some research citing as few as 29% of employees being actively engaged in their jobs (Gallup, 2013). Various research studies have shown that the following factors influence employee engagement: Employers' commitment to and concern for employee welfare; employee perceptions of job importance; clarity of job expectations; career advancement opportunities; regular dialogue with superiors; quality of working relationships with coworkers and superiors; perceptions of the ethos and values of the organization; and employee rewards and recognition (Suda, 2013).

Prior to a discussion of engagement, we will differentiate between work engagement, job commitment, work involvement, and engagement proper. Engagement proper is based in the prior Gallup material. The construct of employee engagement focuses on the immediate—more focused on the work in the moment. It can be likened to cognitive flow (Csikszentmihalyi, 1975). In positive psychology, a flow state, also known colloquially as being in the zone, is the mental state of operation in which a person performing an activity is fully immersed in a feeling of energized focus, full involvement, and enjoyment in the process of the activity. In essence, flow is characterized by complete absorption in what one does, and a resulting loss in one's sense of space and time.

Work commitment is an attitude of commitment to remaining in a type of job and it is often strongly correlated with organizational commitment (Millward, & Hopkins, 1998). The experience is generated from past experiences, and this leads to more future commitment instead. It is different from cognitive flow because it is a broader content domain, which includes vigor, absorption, and dedication, with dedication being focused on overcoming obstacles.

Job involvement (Lodahl & Kejnar, 1965) is considered reflective of personality and far broader than engagement, instead focusing on the importance of one's work within one's life. A person with high work involvement would consider their work to be a primary focus in their life and important to their identity.

Walters and Diab (2016) confirm the findings on disengagement. They cite Kahn's framework of personal engagement and disengagement. When employees are disengaged, they withdraw emotionally, physically and cognitively from their work (Kahn, 1990). Walters and Diab (2016) also refer to work engagement, job engagement, and engagement as interchangeable in their paper on the subject. We will examine the links between engagement and psychological safety.

According to Walters and Diab (2016), Kahn's (1990) framework of engagement, and May's and colleagues' (2004) corroboration suggests that engagement has three antecedents: meaningfulness, safety, and availability. We are interested in the safety function in this paper. As Walters and Diab (2016) explain, psychological safety is the feeling that one can act as oneself without fear of negative ramifications (Kahn, 1990). Safety is predicted by relationships with coworkers and supervisors, coworker norms, and personal self-consciousness (May, Gilson, & Harter, 2004;

Walters & Diab, 2016). We will attempt to connect the relationship between effective followership, engagement, and psychological safety through servant leadership practices.

With specific interventions such as those brought to bear by servant leaders, employees are more likely to become, as Kelley (1992) suggests, followers who are both critical, independent thinkers and active in constructive behaviors. These followers exhibit consistent behavior to all people, regardless of their power in the organization, and deal well with conflict and risk. They cope with change, put forward their own views, and stay focused on what the organization needs. They understand how others see them and are mindful. They make acts of leadership often, and use their referent, expert, network and information power often in service of the organization (Kelley, 1992).

Based upon this follower-centric logic, this research examines servant leadership's influence on effective followership (Kelley, 1988, 1992). Specifically, whether it increases employee psychological safety and, through it, helps employees become more active followers, thinking for themselves and being actively engaged in their work.

Conceptualizing Servant Leadership

Servant leadership can be traced back to Mahatma Gandhi and Martin Luther King, Jr., who promoted it as a method to approach leadership (Mahembe & Engelbrecht, 2013; Sendjaya & Sarros, 2002). Servant leadership is virtuous, highly ethical, and based on the premise that service to followers is at the heart of effective leadership (Mahembe & Engelbrecht, 2013; Sendjaya, Sarros & Santora, 2008). Servant leaders also demonstrate the qualities of vision, caring for other people, altruism, humility, hope, integrity, trustworthiness, and interpersonal acceptance (van Dierendonck, 2011). Servant leadership has become more significant in the Organizational Behavior (OB) research since Greenleaf's (1970) pioneering work on the subject. It has grown in prominence due to empirical evidence demonstrating it represents highly effective leadership practice. According to Northouse (2015), effective leadership is non-linear and highly interactive, qualifications common to servant leaders. Because of these facts, research in servant leadership has become more popular, with 414 books and more than 481 dissertations and peer-reviewed articles written on the subject in the last 40 years (Gandolfi, Stone, & Deno, 2017).

Servant leadership is unique among leadership styles because of its "follower first" position (Stone, Russell, & Patterson, 2004). Servant leadership directs its focus first on followers to succeed and second on the success of the mission (Gandolfi et al., 2017). Spears (2004) has specified facets of Greenleaf's initial definition of servant leadership by presenting ten characteristics present in Greenleaf's description—listening, empathy, healing, awareness, persuasion, conceptualization, foresight, stewardship, commitment to growth of people, and building community. This focus on employee needs and uniqueness of domain content found within dimensions make servant leadership different from other leadership approaches, such as transformational (Avolio & Bass, 1990) and authentic leadership (Luthans & Avolio, 2003). Servant leadership focuses more on serving subordinates first, while transformational leadership is transformative first. Transformational leaders set goals and challenge employees to meet them. They motivate employees to self-lead. Authentic leaders consistently stick with personal values as the main thrust of their leadership.

Edgar Shein (2013) mentions humble inquiry as a cornerstone of servant leadership behavior. He defines humble inquiry as “the fine art of drawing someone out, of asking questions to which you do not know the answer, of building a relationship based on curiosity and interest in the other person.” These ideas link nicely with Greenleaf’s components of listening and empathy, as well as awareness and foresight.

Research suggests that servant leaders can get good outcomes from followers. Northouse (2010) argues that leadership is a process by which one individual exerts influence to guide others toward the accomplishment of a common goal. Yet servant leadership has gone under the radar as far as this type of outcome is concerned. Some focus has moved to servant leadership and humility as important characteristics of effective leadership (Owens & Hekman, 2012). Some characteristics of humility and servant leadership overlap.

Walters and Diab (2016) discuss the concept of humility, which is endemic to effective servant leadership. They state that one of the categories involved in recognizing followers’ strengths and contributions is a verbalized appreciation for subordinates, contributions, acknowledging followers’ strengths, and a referral to the team when talking about successes (Walters & Diab, 2016). These components lead to better employee outcomes. Some of the above aspects of Greenleaf’s initial definition, including listening, empathy, awareness, and commitment to growth of the individual, as well as the modernizing versions thereafter provide a road map to examination of psychological safety, while conceptualization, when modeled to employees, serves as the impetus for their own development of cognitive capacities and independent thinking behaviors.

Conceptualizing Psychological Safety

Psychological safety, according to Kahn (1990), is the feeling that one can act as oneself without fear of ramifications. According to Walters and Diab (2016), psychological safety has been proposed to encourage help seeking, feedback seeking, voicing of concerns, innovation, and the extension of communication beyond the immediate team (Edmondson, Kramer, & Cook, 2004). Freedom from fear and independent thinking are two qualities vital to the success of business organizations. Psychological safety is the feeling that you can tolerate — and even feel comfortable with — an inherently uncomfortable situation. Psychological safety is believed to facilitate independent employee actions to positively impact organizational outcomes (Avolio & Reichard, 2008).

Edmondson (1999) has defined psychological safety as a shared belief that the team is safe for interpersonal risk-taking. Therefore, she sees it as a group construct (Frazier et al., 2016). Frazier, Tupper, and Fainshmidt (2016) see psychological safety as the importance of creating a workplace in which perceptions of interpersonal risk are minimized. Unlike trust and psychological empowerment, psychological safety refers to perceptions of broader social and work environments, and how people perceive that others in the workplace will respond to risk-taking behaviors (Carmeli & Gittell, 2009; Frazier et al., 2016).

Kahn (1990) identified four antecedents to psychological safety: interpersonal relationships, group dynamics, leadership, and organizational norms (Frazier et al., 2016). This is an important aspect of our study because we will look closely at the servant leadership component affecting

psychological safety. Kahn (1990) and Edmondson (1999) identify positive relationships with leaders as having a crucial influence on perceptions of psychological safety (Frazier et al., 2016). These social exchanges between leaders reveal appropriate behaviors, and act as a precursor to psychological safety. Schaubroeck, Lam, and Peng (2011) discuss this very relationship as far as servant leadership goes.

When adults feel psychologically safe, they are more likely to take risks, ask questions, welcome diverse opinions, and generate more productive and creative solutions to problems (Edmondson & Roloff, 2009; Foldy, Rivard, & Buckley, 2009). In other words, they are more likely to engage in deep and meaningful learning. In addition, in conditions of psychological safety, there is a greater proclivity towards independent thinking.

Recent work on psychological safety has stressed the leadership component. Frazier et al (2016) indicate that as leaders develop positive relationships with followers, higher perceptions of psychological safety are likely to occur. As a result, leadership matters in fostering psychological safety. It is in this area that we focus, as multiple research outlets state that there has not been enough research on leadership's impact from multiple perspectives (Edmondson & Lei, 2014).

Relationships between Servant Leadership, Psychological Safety and Effective Followership

Based on a review of the literature, servant leadership is related to follower outcomes, including job attitudes, organizational citizenship behavior, and performance (Liden, Panaccio, Meuser, Hu, & Wayne, 2014; van Dierendonck, 2011) as well as outcomes at the team level (Ehrhart, 2004; Hu & Liden, 2011; Schaubroeck, Lam, & Peng, 2011). Liden et al. (2014) suggest that servant leaders affect culture in the workplace, creating behavioral norms and expectations (Cooke & Rousseau, 1988). Liden et al. (2014) go on to argue that because servant leaders tend to be respected and admired by followers, they become motivated to emulate their leaders' behaviors. In other words, servant leaders may consciously or unconsciously encourage follower behaviors through role modeling (Liden et al., 2016; Chartrand & Bargh, 1999).

Emulation is a key component of the link between servant leadership and followership. Graham (1991) argues that follower emulation of leader behavior is a key component of servant leadership. Often servant leaders serve as mentors to the followers (Sosik & Godshalk, 2000), which leads to imitation (Weiss, 1977; Yaffe & Kark, 2011). They come to know and accept themselves and self-regulate their behavior to achieve goals that are, in part, derived from and congruent with those of the leader. Hence, expect an authentic relationship between the leader and followers to emerge which is characterized by open and positive exchanges as they pursue shared and complementary goals that reflect deeply held and overlapping values (Avolio & Gardner, 2005).

Engagement as a component of effective followership is also connected to servant leadership. Liden et al. (2014) discuss the concept of serving culture, or the presence of "...a pattern of shared basic assumptions learned by a group as it solved its problems of external adaptation and internal integration...to be taught to new members as the correct way to think, perceive, and feel in relation to those problems." (Schein, 2010). Engagement in these behaviors can be substantially influenced by upper-level management (Liden et al., 2014; Gelfand, Leslie, Keller & de Dreu, 2012; Schein, 1990).

A link between followers and psychological safety also exists. Schein (2013) makes a strong case for the relationship between humility, as shown through a servant leader's use of humble inquiry that overcomes boundaries based on status and position, allowing for greater psychological safety, which serves the foundations for positive working relationships and communication. Schaubroeck et al. (2011) found that servant leaders' empathy, ethical behavior, and prioritization of follower needs develop mutual trust between leaders and followers over time. The trust in turn gives followers the ability to take initiatives and engage in serving behaviors themselves (Colquitt, Scott & Lepine, 2007).

In addition, there is a positive relation between psychological safety and employee engagement (Kahn, 1990; May et al., 2004). Kahn (1990) found that higher levels of psychological safety were more strongly associated with engagement than disengagement (Walters & Diab, 2016). Additionally, May et al (2004) found out that psychological safety was the mechanism by which supervisor relations influenced employee engagement (Walters & Diab, 2016).

The last link is between servant leadership and psychological safety. Walumba and Schaubroeck (2009) found that psychological safety mediated the relation between ethical leadership and followers; voice behavior (Walters & Diab, 2016). In addition, Tynan (2005) found that psychological safety mediated the effect of supportive behaviors by supervisors on help seeking and admission of error by followers (Walters & Diab, 2016). Perhaps most importantly, Schaubroeck, Lam and Peng (2011) hypothesize that servant leadership is positively related to team psychological safety through the mediating influence of team members' affect-based trust in the leader. What they discovered is that psychological safety is positively related to team psychological safety and the result is significant.

METHOD

Procedures and Participants

Data collection. Data were collected in *SurveyMonkey*. The quantitative instrument was composed of Likert-type items that included items concerning one's immediate supervisor as well as self-report items. The participation rate for those asked to participate was over 95 percent.

Participants. A total of 118 master's program students participated in the survey and recruited an additional 298 participants who worked within their organizations, providing a total of 416 participants. The students were asked to provide surveys to their coworkers and the entirety of the data was used, with only 28 percent of the data being professional, working masters students, and 72 percent being non-students. The average age of participants was 28 and the sample consisted of 285 males and 131 females. The average tenure of the participants in their organizations was slightly over 5 years.

Measures. All of the instruments used have been previously used in peer-reviewed, published research. The responses to these pre-existing measures for this study were rated using a seven-cell Likert-format (1 = *strongly disagree*, 2 = *disagree*, 3 = *slightly disagree*, 4 = *neither agree nor disagree*, 5 = *slightly agree*, 6 = *agree*, and 7 = *strongly agree*).

Servant leadership. This study utilized the 28-item instrument created by Liden, Wayne, Zhao, and Henderson (2008). The instrument was used for rating one's immediate supervisor. It consists of seven dimensions: behaving ethically, conceptual skills, creating value of the community, emotional healing, empowering, helping subordinates grow and succeed, and putting subordinates first. An example of an empowerment item is, "My manager gives me the responsibility to make important decisions about my job." An example of a create value for the community item is "My manager emphasizes the importance of giving back to the community." An example of an emotional healing item is "My manager would be someone I turn to if I had a personal problem." An example of a behaving ethically item is "My manager would not compromise ethical principles in order to achieve success." The Cronbach alphas for the dimensions within this study are .94 for behaving ethically, .89 for conceptual skills, .85 for creating value of the community, .84 for emotional healing, .89 for empowering, .90 for helping subordinates grow and succeed, and .88 for putting subordinates first. Collectively, the entire instrument's alpha is .94 for this study.

Psychological safety. The instrument used to assess psychological safety was created by May et al. (2004). The instrument is used to assess one's own feelings. The items that composed this instrument are "I'm not afraid to be myself at work," "I am afraid to express my opinions at work," (reverse-coded), and "There is a threatening environment at work" (reverse-coded.) The Cronbach alpha for the scale within this study is .88.

Effective followership. The instrument created by Kelley (1992), consisting of two dimensions, engagement and independent thinking, was utilized. Each dimension consists of ten items. Examples of engagement items include "When starting a new job or assignment, do you promptly build a record of successes that are important to the organization and its leaders?" and "When you are not the leader of a project, do you still contribute at a high level, often doing more than your share?" Two examples of independent thinking items include "Instead of waiting for or merely accepting what the leader tells you, do you personally identify which organizational activities are most critical for achieving the organization's priority goals?" and "Do you make a habit of internally questioning the wisdom of the leader's decision rather than just doing what you are told?" The Cronbach alphas for the engagement and independent thinking dimensions within this study are .96 and .95, respectively. Collectively, the Cronbach alpha for effective followership within this study is .95.

Data Screening. For cases with less than five percent of the data missing, we imputed the missing values using the median as an ordinal value since we used Likert-type scales. Box plots were examined for outliers. We examined kurtosis for values greater than ± 2.00 and found no issues. All the items were retained since kurtosis did not have any impact on exploratory factor analysis.

Exploratory Factor Analysis. Because of the limited amount of validity testing concerning Kelly's (1992) effective followership instrument, an exploratory factor analysis with maximum likelihood was used to determine the unique variance among the items and the correlations among the factors to be consistent with our subsequent CFA. We used a Varimax rotation to determine whether the observed variables loaded together as expected on latent variables, since the data set was large ($n = 416$) and Varimax can handle correlated factors. The KMO (.93) and Bartlett's test ($p < .000$) for sampling adequacy were satisfactory. The communalities for each variable were sufficiently high (all of them above 0.45 and only one below .50), thus confirming that the chosen variables were adequately

correlated for factor analysis. Ten factors emerged based on eigenvalues above 1.0, accounting for 68.61% of cumulative variance. The factors for the latent variables of servant leadership and effective followership, demonstrate sufficient convergent validity (Hair, Black, Babin, & Anderson, 2010) as well as discriminant validity, without any problematic cross-loadings.

Confirmatory Factor Analysis. Confirmatory factor analysis was performed in Amos 21.0. To improve the model, we covaried multiple disturbance terms for items within servant leadership. Multiple disturbance terms were also allowed to covary for effective followership. The goodness-of-fit results indicate good model fit ($\chi^2 = 11835.60$; $df = 1179$; $\chi^2/df = 1.56$; CFI = .96; RMSEA = .04; GFI = .86; AGFI = .84; SRMR = .04; and NFI = .90) based on accepted thresholds, with only AGFI being slightly below the suggested .95 for a good fit (Hair et al., 2010). The hypothesized ten-factor model was compared with two alternative models, each one examining one of the latent variables as unnecessary. Alternative Model 2 is a four-factor model in which the seven our dimensions of servant leadership are combined. Alternative Model 4 is a nine-factor model combining the two dimensions of effective followership. The results, shown in Table 1, indicate that the hypothesized model best fit the data.

Table 1. CFA model comparison

<i>Model</i>	<i>Description</i>	χ^2/df	CFI	RMSEA	AGFI	NFI
Hypothesized Model: Ten factor solution based on EFA		1.56	.96	.04	.84	.90
Alternative Model 1: One factor solution		9.59	.36	.14	.22	.33
Alternative Model 2: Servant leadership factors combined		4.51	.74	.09	.58	.69
Alternative Model 3: Servant Leadership and psychological safety combined		4.91	.71	.10	.57	.66
Alternative Model 4: Effective followership factors combined		3.76	.80	.18	.49	.75

N = 416

Common method bias. Since all of the data for independent and dependent variables were collected using the same survey instrument, common method bias was examined (Podsakoff, Mackenzie, Podsakoff, & Lee, 2003; Podsakoff & Organ, 1986). Harman's single factor test revealed that the factor did not account for a majority of the variance (28.67 percent). Also, no single factor emerged during the EFA and the first factor accounted for 15.59 percent of the variance, below the 25.00 percent cutoff (Williams, Cote, & Buckley, 1989). In addition, we used an unmeasured common latent factor (CLF) method recommended by Podsakoff et al. (2003) to capture common variance among all observed variables within the model, as well as convergent and discriminant validity. Common method was not an issue and all of the latent factors had a composite reliability (CR) higher than .70. For convergent validity, all of the CR values were greater than the average variance extracted (AVE) values. For discriminant validity AVE was greater than maximum shared variance (MSV) on all of the latent factors, and the inter-factor correlations were lower than the square-root of AVE.

The means, standard deviations, AVE, MSV, reliabilities, and correlations are included in Table 2 below.

Table 2. Means, standard deviations, AVE, MSV, reliabilities, and correlations

Variable	M	S.D.	CR	AVE	MSV	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Behaving ethically	5.28	1.56	.94	.80	.20	.89									
2. Conceptual skill	5.12	1.57	.89	.67	.45	.34	.82								
3. Creating value	5.31	1.21	.85	.59	.45	.40	.67	.77							
4. Emotional healing	5.15	1.47	.85	.58	.28	.39	.48	.53	.76						
5. Empowering	5.30	1.55	.89	.67	.41	.45	.44	.51	.50	.82					
6. Helping subordinates grow	5.29	1.34	.90	.70	.41	.32	.46	.54	.49	.64	.84				
7. Putting subordinates first	4.98	1.33	.88	.65	.26	.30	.39	.50	.38	.46	.51	.80			
8. Psychological Safety	5.08	1.59	.88	.72	.20	.35	.39	.42	.40	.44	.40	.36	.85		
9. Follower engagement	4.83	1.75	.96	.72	.19	.34	.24	.30	.25	.27	.29	.13	.19	.85	
10. Independent thinking	5.12	1.60	.95	.65	.19	.20	.27	.32	.19	.31	.30	.16	.35	.44	.81

N = 416

Structural Model. The hypothesized SEM model was compared with three alternative models. Alternative model 1 examined psychological safety as unrelated to servant leadership, but as a predictor of effective followership. Alternative model 1 examined the model with an additional direct relationship between servant leadership and effective followership. Alternative model 2 examined separate relationships between servant leadership and psychological safety with engagement and independent thinking. Alternative model 3 examined psychological safety as a predictor of both servant leadership and effective followership. Alternative model 4 examined servant leadership as a direct predictor of engagement and independent thinking. For all of the models, disturbance terms were allowed to covary. The results, shown in Table 3, indicate that, while all of the models were similar due to the small changes made to the hypothesized model, the proposed model fit the data better than the alternatives.

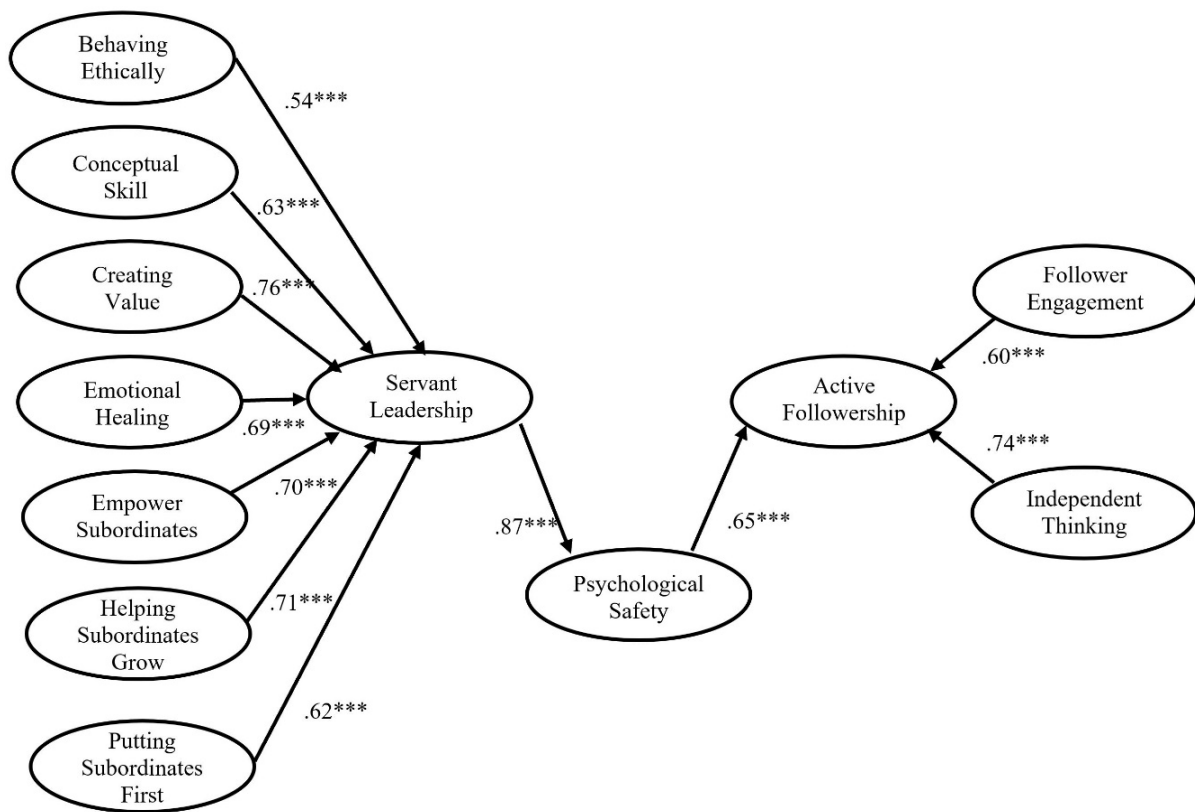
Table 3. Structural model comparison

Model	χ^2/df	CFI	RMSEA	GFI	AGFI	NFI
Hypothesized Model	1.29	.98	.03	.88	.86	.92
Alternative Model 1	1.47	.97	.03	.87	.85	.91
Alternative Model 2	1.39	.97	.03	.87	.85	.90
Alternative Model 3	1.31	.98	.04	.88	.86	.91
Alternative Model 4	1.39	.97	.03	.87	.85	.91

N = 416.

The results of the comparison of hypothesized and alternative models is shown in Table 3. The proposed model fit the data slightly better than the likely potential alternative models ($\chi^2 = 1480.52$; $df = 1150$; $\chi^2/df = 1.29$; CFI = .98; SRMR = .04; RMSEA = .03; GFI = .88; AGFI = .86; and NFI = .92). Significant standardized parameter estimates for the Hypothesized Model are shown in Figure 1.

Figure 1. Hypothesized model and structural equation modeling results



Notes: *** indicates significance at the .001 level.

RESULTS

The path coefficients and their p-values were examined to determine support for the hypotheses. A strong positive relationship was found for Hypothesis 1, representing a direct relationship between servant leadership and psychological safety ($\beta = .80$, $b = .87$, $S.E. = .10$, $C.R. = 7.77$, $p \leq .001$). Hypothesis 2 examined the relationship between psychological safety and effective followership. A strong relationship was found ($\beta = .77$, $b = .65$, $S.E. = .14$, $C.R. = 5.54$, $p \leq .001$). Hypothesis 3 focuses on the effect of servant leadership on effective followership through psychological safety as a mediating variable. As such, examination of the indirect effect and its confidence for servant leadership with psychological safety as a mediator is necessary. While results indicate that psychological safety partially mediates the relationships of servant leadership and effective followership (total and indirect effect of $\beta = .62$, $S.E. = .12$, $LC = .33$, $HC = .99$, $p \leq .001$). Therefore, hypothesis 3 is also fully supported, with a strong indirect effect of servant leadership on effective followership.

DISCUSSION

All three of the hypotheses within this study were supported. The first hypothesis concerned the relationship between servant leadership and psychological safety. The results suggest that servant

leadership can help create an attitude of psychological safety among subordinates. Previous studies have linked psychological safety to identify positive relationships with leaders (Edmondson, 1999, Kahn, 1990), ethical leadership (Walumbwa & Schaubroeck, 2009), servant leadership (Schaubroeck, Lam, & Peng, 2011), transformational leadership (Detert & Burris, 2007), leader–member exchange (Coombe, 2010; Dulebohn, Bommer, Liden, Brouer, & Ferris, 2012), and trust in one's leader (Madjar & Ortiz-Walters, 2009). This study provides further support to the relationship of leadership to psychological safety. The servant leadership dimensions of behaving ethically, conceptual skills, creating value of the community, emotional healing, empowering, helping subordinates grow and succeed, and putting subordinates first (Liden et al., 2008) would seem to make subordinates feel less anxiety and more psychological comfort.

The second hypothesis concerned the positive relationship between psychological safety and effective followership. It was supported as well. This fits well with extant findings in the literature. Kelley (1992) defined effective followership as a composite of engagement and independent thinking. As it relates to this conceptualization, previous studies by Kahn (1990) and May et al., (2004) support engagement as an outcome of psychological safety. Similarly, as it relates to independent thinking, personal initiative (Edmondson, 1999), creativity (Amabile, 1998), learning behavior (Carmeli, Brueller, & Dutton, 2009; Carmeli & Gittell, 2009), and employee voice (Detert & Burris, 2007; Frazier & Bowler, 2015; Frazier & Fainshmidt, 2012) were found to be outcomes of psychological safety. These three outcomes share some conceptual relationship with independent thinking. In addition, as it relates to the concept of effective followership, previous studies found task performance (Baer & Frese, 2003; Schaubroeck et al., 2011), information sharing (Bunderson & Boumgarden, 2010), citizenship behaviors (Liang, Farh, & Farh, 2012; Van Dyne & LePine, 1998), and organizational commitment (Detert & Burris, 2007; O'Neill & Arendt, 2008) were outcomes of psychological safety.

In terms of advancing the literature, this study provides theoretical support for psychological safety as a mechanism by which servant leadership leads to effective followership. This study purports that subordinates who experience psychological safety as a result of a positive leadership experienced will respond by being more engaged and independent thinking followers. This argument took the form of a third hypothesis that posited full mediation between servant leadership and effective followership by psychological safety. Support for this hypothesis suggests that servant leadership could be combined with other approaches that generate increased feelings of security and decreased anxiety among subordinate. Also, intentional focus on psychological safety as a goal of servant leadership may lead to more engaged and independent subordinates without the need for direct intervention in those areas.

The practical implication of this study is that servant leaders can help subordinates become more capable, more involved, more self-determining by helping them to feel safe within the work environment. Serving their psychological needs, particularly their needs of confidence, comfort, and security, can help them as much, and possibly more, than focusing on their material needs, their competencies, and their work-related tasks. Providing subordinates with the confidence to speak their mind, disagree, take the initiative, and proactively handle challenges can increase the impact of a servant leader. Rather than the manager guessing their needs, subordinates can announce them and define them, reducing the amount of effort and attention the manager must provide. Through this increase in effective followership, subordinates can help themselves and require less attention and direct service from their managers.

Study Limitations: This study has a number of limitations. In particular, all of the data was collected through a single survey instrument. Therefore, it is subject to potential common method. However, examination using Harman's single factor and the unmeasured common latent factor (CLF) methods suggested it is not a serious issue. Additionally, the data was collected at one point in time, rather than having time series data, thus there may be influencing contextual issues that are unmeasured. In addition, the followership and psychological safety measures, while used in other studies, have not been highly examined in terms of psychometric soundness.

Future studies. Extending beyond the findings within this research, future studies could focus on other mechanisms aside from psychological safety that might also serve as mechanisms by which the benefits of servant leadership are actualized among subordinates. Mechanisms might be attitudinal or behavioral. Perceived supervisor support (Eisenberger, Stinglhamber, Vandenberghe, Sucharski, & Rhoades, 2002), trust (Hosmer, 1995; Mayer, Davis, & Schoorman, 1995), and leader-member exchange (LMX; Graen & Uhl-Bien, 1995) provide potentially viable alternatives to psychological safety as approaches to impacting followership among subordinates.

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APPENDIX: INSTRUMENTS USED IN THE STUDY

Servant Leadership (Liden et al. 2008)

Emotional Healing

1. Would be someone I turn to if I had a personal problem
2. Cares about my personal well-being
3. Takes time to talk to me on a personal level
4. Can recognize when I'm down without asking me

Creating Value for the Community

5. Emphasizes the importance of giving back to the community
6. Is always interested in helping people in our community
7. Is involved in community activities
8. Encourages me to volunteer in the community

Conceptual Skills

9. Can tell if something is going wrong
10. Is able to effectively think through complex problems
11. Has a thorough understanding of our organization and its goals
12. Can solve work problems with new or creative ideas

Empowering Subordinates

13. Gives me the responsibility to make important decisions about my job
14. Encourages me to handle important work decisions on my own
15. Gives me the freedom to handle difficult situations in the way that I feel is best
16. Allows me to make an important decision at work without consulting him or her

Helping Subordinates Grow and Succeed

17. Makes my career development a priority
18. Is interested in making sure that I achieve my career goals
19. Provides me with work experiences that enable me to develop new skills
20. Wants to know about my career goals

Puts Subordinates First

21. Seems to care more about my success than his/her own
22. Puts my best interests ahead of his/her own
23. Sacrifices his/her own interests to meet my needs
24. Does what she/he can do to make my job easier

Behave Ethically

25. Holds high ethical standards
26. Is always honest
27. Would not compromise ethical principles in order to achieve success
28. Values honesty more than profits

Psychological Safety (May, Gilson, & Harter, 2004)

1. I'm not afraid to be myself at work.
2. I am afraid to express my opinions at work. (reverse-coded)
3. There is a threatening environment at work. (reverse-coded)

Fellowship Style (Kelley, 1992)

Independent Thinking Items Scoring (Dependent)

1. Does your involvement help you fulfill some societal goal or personal dream that is important to you?
2. Instead of waiting for or merely accepting what the leader tells you, do you personally identify which organizational activities are most critical for achieving the organization's priority goals?
3. Do you independently think of and champion new ideas that will contribute significantly to the organization's goals?
4. Do you try to solve the tough problems (technical, organizational, etc.) rather than look to the leader to do it for you?
5. Do you help the leader or organization see both the upside potential and downside risks of ideas or plans, playing the devil's advocate if needed?
6. Do you actively and honestly own up to your strengths and weaknesses rather than put off evaluation?
7. Do you make a habit of internally questioning the wisdom of the leader's decision rather than just doing what you are told?
8. When the leader asks you to do something that runs contrary to your preferences, do you say "no" rather than "yes?"
9. Do you act on your own ethical standards rather than the leader's or the group's standards?
10. Do you assert your views in important issues, even though it might mean conflict with your group or leader?

Active Engagement Items Scoring (Passive)

11. Are your personal goals aligned with your student organization's priority goals?
12. Are you highly committed to and energized by your involvement and organization, giving them your best ideas and performance?
13. Does your enthusiasm also spread to and energize your peers?
14. Do you actively develop a distinctive competence in those critical activities so that you become more valuable to the organization and its leaders?
15. When starting a new job or assignment, do you promptly build a record of successes that are important to the organization and its leaders?
16. Can the leader of your organization give you a difficult assignment without the benefit of much supervision, knowing you will meet your deadline with high-quality work?
17. Do you take the initiative to seek out and successfully complete assignments that go above and beyond your role?
18. When you are not the leader of a project, do you still contribute at a high level, often doing more than your share?
19. Do you help your peers, making them look good, even when you don't get any credit?
20. Do you understand the leader's needs, goals, and constraints, and work hard to meet them?

WHEN TACIT ORGANIZATIONAL FACTORS ARE BARRIERS TO AFRICAN AMERICANS FOR EXECUTIVE LEADERSHIP: START HERE!

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ABSTRACT

In the face of legal requirements to control discrimination and financial outputs that indicate increased productivity and revenues from diverse work forces, all while providing satisfactory outcomes for all stakeholders, today's organizations face incessant pressure to diversify the work force at all levels. As a response to these heightened expectations, virtually all contemporary organizations employ some form of diversity planning. However, change at the top of organizations has been slow, and change at lower levels of organizations has been inconsistent, thereby resulting in too few African Americans being promoted into executive positions, an indicator of stalled socioeconomic status for African Americans. That is, organizations, on average, are capping upward mobility for African Americans through a variety of behaviors.

While much continues to be made about the importance of a diverse work force, the numbers of African Americans in executive positions continues to be disproportionately low. This paper reviews the research literature which articulates the tacit organizational factors that contribute to low representation of African Americans in executive positions, because organizations are powerful purveyors of change. This complex snapshot of the variable factors, all under the control of the organization, contribute to low representation of African Americans in executive positions. A cultural assessment it is recommended as a first step to assist in identifying potential tacit organizational barriers.

Keywords: Race, Executive, Diversity, African American, Leadership

INTRODUCTION

I think that there are all kinds of presumptions that we make about each other based on race. I think that there is still a very tragic sense of who is better, and who is not, that is heavily influenced by race. I think we have a lot of doubts, a lot of distrust, and a lot fear that is organized primarily around race, and until we deal with it, it will just grow.... We don't like talking about race, and that's as true today as it was 40 years ago as it was 80 years ago.

Brian Stevenson, Founder and Executive Director of the Equal Justice Initiative
Montgomery, Alabama. From *Mobile in Black and White* (Lewis, 2014)

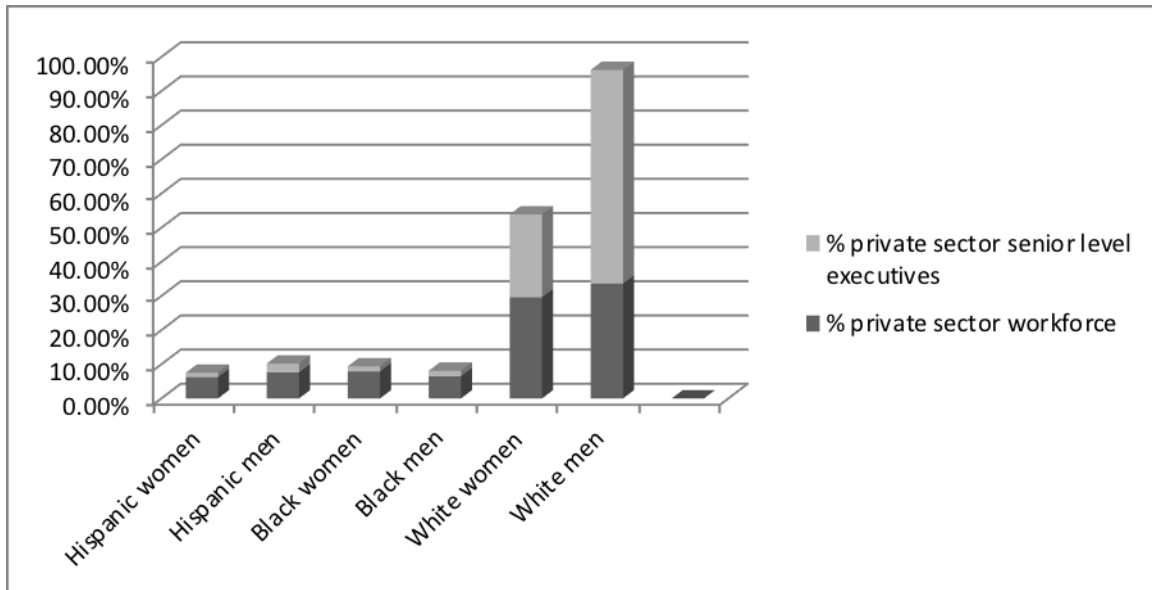
In the past 50 years, a change in the opportunities available to minority groups occurred in the United States, due to the promulgation of anti-discrimination laws in the 1960s and 1970s (Hewlett, Luce, & West, 2005; Robert, 2010). During the past two decades, global talent shifts

have also occurred that allowed more people from minority groups to participate in executive and political leadership (Hewlett et al., 2005). Despite these events, the representation of African Americans in executive leadership across all disciplines is extremely low (Davis & Maldonado, 2015; Gurchiek, 2017; Guynn, 2016; Hewlett et al., 2005). Evidence from research and professional organizations indicates that African Americans are not being promoted nor do they advance at a rate that is commensurate with their representation within the workforce or general population. Few make it to executive leadership positions (Gurchiek, 2017), particularly in the higher paying fields of general business, management, and finance. In the United States, African Americans continue to experience barriers to advancement and self-actualization associated with race. This outcome flies in the face of the enactment of laws, e.g. the Civil Rights Acts of 1866, 1871, 1957, 1964, 1968, and 1991, Fair Employment Act of 1941, and Title VII of the Civil Rights Act of 1964, as well as the Fourteenth Amendment to the United States Constitution, all of which specifically address issues of discrimination toward resolving employment challenges (Robert, 2010).

Nonetheless, for African Americans, the challenge associated with being black in America is even more glaring when one looks at the upper echelons of organizations. Executive positions are rare for African Americans. Gurchiek (2017) notes that there have been only 15 African American CEOs in the history of the Fortune 500, with only three, or less than 1%, currently serving as CEO of a Fortune 500 company (McGirt, 2018). No minorities were ever served as a CEO of a Fortune 500 company before 1998, when Franklin Baines was selected to lead Fannie Mae. (Thomas & Gabarro, 1999) Further, there is little chance that a person of color will retain such a position – the odds are 33-1, when compared to retention of Whites (Thomas & Gabarro, 1999). Similarly, executive team positions are rare for African Americans. In Fortune 100 companies, black men and women make up only 4.7% of executive team members, a share that has remained the same since the inception of the survey in 2011 (McGirt, 2016). At the same time, the American labor force includes 159.2 million, or 12%, African Americans as a subset in the work force, an approximately equitable representation of the overall population which is 13.4% African American (United States Census Bureau, 2018). The Bureau of Labor Statistics (BLS) projects that this will increase to 169.7 million, or 12.7%, by 2026. This suggests that African Americans are close to reaching race parity for representation within the general labor force as percentage of the population. Nonetheless, African Americans hold only 6.7% of the 16.2 million management jobs in smaller U.S. companies, although they comprise twice that share of the nation's population (McGirt, 2016).

One U.S Equal Employment Opportunity Commission (2011) survey found that African Americans constitute 2.8% of CEOs, a number that is the lowest among the major ethnic groups in the country (Caucasian, Asian, African American, and Hispanic). African Americans occupy only 10% of business, management, and financial occupations, and hit their glass ceilings at around the mid-management level. By contrast, whites, predominantly men, hold 93% of CEO positions, a share that is 20% greater than white percentage within the general labor force (James, 2017). Figure 2 indicates the wide disparity in senior/executive level positions by race.

Figure 1. Racial Representation of Workforce and Senior Executives in Business. Adapted from American Association of University Women [AAUW], 2016.



LITERATURE REVIEW

The modern business environment is shaped by dynamic forces including global talent shifts, human rights, technology, governance, legislative advancements, and diversity. Understanding the factors that influence the attainment of executive leadership positions by African Americans is imperative, particularly, because present day business contexts seek diverse responses to complex problems. Toward providing a well-developed foundation for 1) realizing truthful discussion about race in organizations and 2) the organizational role in lack of representation for African Americans at executive levels, this literature review focuses on tacit factors that are under organizational control.

Diversity management is a difficult and complex effort that challenges organizational professionals every day. Factors that influence and create the complexity are discussed within this literature review with the acknowledgment that some of these challenges have been addressed to some extent, but none have been effectively mastered. These factors are tacit, and therefore, have been overlooked or are not fully understood by all organizational members. This creates significant concerns in the workplace, because workplace diversity is increasing. Moreover, this serves to perpetuate workplace inequalities.

Kanter (1977) posited that observed differences in the behaviors of men and women in the context of organizations arose from organizational structure and social circumstances rather than attitudes. She believed that productivity, motivation, and career success were predetermined by the situations handed to employees (Barnett, 1987).

Thus, observed differences in the behavior – and the success - of men and women had more to do with what they were handed by the organization than with inherent differences in

ability or drive. When men and women were dealt similar cards and given similar places in the corporate game, they behaved in similar ways. The problem, though, was that men and women rarely were dealt similar cards....instead of blaming individuals for poor attitudes, I proposed we fix organizations. (Kanter, 1987 as interviewed by Barnett, 1987, p. 257-8)

Industry responded to her perspective by improving participative management and employee involvement as part of operating practices. Within 10 years, Kanter reported notable improvements for women. These authors have used Kanter's (1977) perspective to inform an approach to the current problem of too few African Americans in executive positions. Deming (2000) also emphasized that the problems lie with organizations, not the employees. Rather than concentrating on ways to improve diversity participation and activities, these authors focus on organizational factors that are tacit and not always understood by organizational leaders/decision makers, because these factors obscure the true picture of workplace inequalities. The key areas of literature presented include intersectionality, organizational culture, information access, and homosocial reproduction. These are the areas where organizations can be "fixed" toward providing greater opportunities to achieve equality.

Intersectionality

Crenshaw, as cited in Corlett & Mavin (2013) crafted the original definition of intersectionality to address African American women's unique needs and to propose activist practices and policy changes. Intersectionality is overlapping of inequalities which produce a distinctive social category that is more than the sum of adding single categories, and thus creates unique *disadvantages*. Intersectionality is presented as a theory of gender and social identities to explore multiple and intertwined identities that have developed within a socio-cultural power framework. When examined at the individual level of experience (micro), these interlocking identities create inequality at the social level (macro). However, gender and social identities are continuously shifting, complicated, and can be contradictory (Corlett & Mavin, 2013); as a result, no single experience provides only privilege or only oppression. Kang, Callahan, and Anne (2015) indicate that gender and ethnicity issues, the foundations of intersectionality, are underrepresented within the body of work that includes organizational study and policies. Nonetheless, gender and race intersectionality is important to understand for its contribution to an individual's economic stability as well as self-esteem because there is a direct impact on career development needs.

Wingfield (2013) addresses intersectionality, specifically, as she investigates the impact of both race and gender for black men at work. For example, African American men may have a distinct advantage solely, because they are men, while simultaneously experiencing a disadvantage for being African American. Wingfield (2013) posits that tokenization may be mitigated by the interaction of race and gender for men. She did not find this to be true for women.

As cited by Wingfield (2013), Williams (1995) suggests that men may experience a "glass escalator" when employed in woman-dominated fields while women continue to suffer a "glass ceiling" when employed in male-dominated fields, even when the employee is a token. Woodhams, Lupton, and Cowling (2015) corroborate this point when they found that ethnic men and men with disabilities are less likely to be advantaged by the glass escalator, clearly indicating

that being male was less advantageous when the employee is African American or disabled. They also found that ethnic men are more likely to be found at low level work and part-time work. Not surprisingly, they found that white men and men without disabilities were more likely to be advantaged over all other employees by the glass escalator effect. Similarly, Davis (2012) conducted a phenomenological study on leadership development of African American women executives in academia and business. The purpose of this study was to explore the intersectionality of gender and race for this group as they developed into leaders. The study found women's leadership development is grounded in family traditions. The women referred constantly to the guidance and support provided by family. Their leadership personalities and leadership identities developed in the family setting. Women maintained confidence in their identities even while interacting with dominant culture organizations, even though the women believed they received differential treatment based on their gender and race.

Bell and Nkomo (2001), as cited by Wingfield (2013) and Powell (2018), note the unique disadvantages suffered by African American women as compared to White women. African American women had fewer resources, e.g. network contacts, felt greater pressure to perform than their White colleagues, and were less likely to have African American role models, all while facing substantial barriers to advancement. The women believed they were stereotyped as "incompetent and unqualified." Although African American men have also been labeled as incompetent, overall, the men have, nonetheless, achieved more promotions to higher management.

Anestaki, Sabharwal, Connelly, and Cayer (2016) corroborate these earlier study findings by investigating the impact of intersectionality across United States Presidential administrations. Notably, the administration of George W. Bush appointed the highest numbers of male White appointees of the administrations covering the years of 1993-2013. During these years, President Clinton was most likely to appoint African Americans while President Obama was more likely to appoint Native Americans and Pacific Islanders. President Clinton was the most likely to promote African American women during these years, showing a statistically significant likelihood of choosing African American women over President Obama. For General Service (GS) positions, President Bush was more likely to appoint Hispanic men than Presidents Clinton and Obama. Overall, women showed an upward trend across all administrations, but these authors reinforce that males and Whites continued to be overrepresented through 2013.

Finally, Livingston, Rosette, and Washington (2012) highlight the importance of understanding the impact of intersectionality with their investigation into race and gender bias as it applies to sanctions that result from race and gender of executive leaders. This study found that Caucasian women and African American men were more likely to experience sanctions for agentic behaviors, e.g. dominance, anger, self-promotion, and assertiveness. Livingston et al. (2012) did not find evidence of sanctions toward African American women who displayed agentic behaviors. This enigmatic finding indicated that African American women received the same outcomes as White males. These authors posit that there are differing penalties for dominance rather than competence related mistakes, and African American women are less likely to be seen as a threat to status and less relevant to power struggles.

Taken together, these studies on intersectionality indicate the complexity of dealing with gender and race bias, particularly as it impacts decision making of organizational leaders. While

Livingston et al. (2012) discovered a window of opportunity that may create advantage for African American women, other authors did not indicate such an advantage, likely because studies have been focused on the impact of gender from the perspective of being White. That is, the predponderance of subjects in gender studies have been white, a gap which Livingston et al. (2012) sought to address through cross race comparisons.

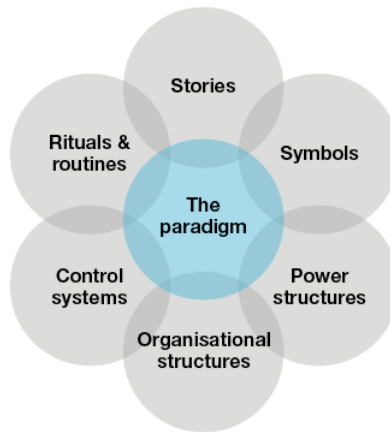
Organizational Culture

Shein (1984) explains the three levels of organizational culture to include 1) basic assumptions (“taken for granted, invisible, preconscious” (p. (4)), 2) values, and 3) symbols that may be visible, but indecipherable. As stereotyping and perceptions arise from organizational experiences, this can represent, at least in part, a source of perceptions for social inequality. Social inequality impacts the organizational experience of individuals as well as outcomes. For example, this is where discrimination is experienced, defined as denying or limiting potential opportunity for employment based on a relationship to characteristics of a protected class of individuals (Walsh, 2007; as cited in Smith and Joseph, 2010). These could include, but are not limited to, racial, gender and sexual harassment. Although discriminatory practices may not be intentional or based on the white male against females or minorities model, these are often stereotyped views which are enacted through discriminatory practices because of unrecognized employer biases. Pay disparities and exclusion from different networks have also been noted, potentially, as unrecognized biases.

Smith and Joseph (2010) identified five different themes from their research that may be consider “unrecognized” by organizational members, including organizational culture, discrimination and stereotyping, human capital investment, Eurocentric worldview and dual status, and partial inclusion (p. 751). Organizational culture is perceived as the greatest impact on an individual’s experiences and outcomes, based on standard practices and policies, and to whom advantages are given, even though the legal requirements for diversity appear to have no influence on organizational norms. Organizational practices may be so deeply embedded that members of the organization are not conscious of how these may create a discriminatory environment.

Johnson (2000) discusses the cultural web as a model to address a broader way to approach the multiple interdependencies of culture. As in Schein (1984), there is an underlying assumption that basic heuristics are shared within group. This model is presented as a Venn diagram of seven circles with each circle representing a different dimension of organizational culture. The dimensions are paradigm, symbols, power structures, organizational structures, control system, rituals and routines, and stories. Paradigm, found in the middle, provides the anchor for the model, through which all other dimensions connect and influence culture. He argues that a benefit of the web approach is consensus-building, finding a “collective mind.” that results from discussions about the nature of each dimension.

Figure 2. The Cultural Web (Johnson, 2000).



These approaches are only three of the many approaches that can be found in the literature as frameworks for assessing organizational culture; however, many graduate business students are not familiar with implementing such frameworks. Conversely, universities and organizations approach culture through theory rather than application, thus leaving the work of analysis without an appropriate foundation. Later, we will provide a simple tool to help organizations tackle the project of analyzing internal culture.

Information Access

Sturm (2009) proposes that workplaces do not consistently or systematically provide the most important information necessary to obtain access to opportunities or to obtain the resources necessary to support these opportunities, advancement and recognition, because much of this is tacit knowledge. Sturm (2009) reminds us that research has documented the existence of “implicit cognitive frameworks” (p. 95), and that these frameworks, used to inform or evaluate people of color, exist as another dimension of inequality. Disadvantages may also exist in the ground rules, both procedural and substantial, which are embedded with assumptions and may date back to when ground rules were established that did not include minorities. Because these ground rules have been in place for some time, decisions that result from these ground rules are continuously reflected in the accumulation of decisions that now may be perceived as inequitable. These “systemically rooted disparities” (Sturm, 2009, p. 96) exist in ground rules and networks, information, and other organizational paradigms. Sturm (2009) refers to these as second-generation dynamics.

Homo Social Reproduction

Homosocial reproduction is described as similar superiors who have access to power positions beneath them (Elliott and Smith, 2004). Homo social reproduction is common among all ethnic and gender groups; however, these groups do not have sufficient opportunity in the work place, outside of white males, to engage in these practices with frequency. This study indicates that men and women of various ethnicities do experience inequality in workplace power relative to white men, and they experience it by different mechanisms and to differing degrees. This may be due to underdeveloped human capital. For example, Elliott and Smith (2004) found that African American men were only about half as likely to be managers/supervisors as white men. When they

added a more rigorous test to include total years employed, job experience, education, and employer tenure (human capital factors), they could only explain inequalities for Latinos and white women; conversely, the added controls did not explain inequalities for Latinas, African American men or African American women. Finally, after adding more controls through employment context factors, they could explain inequalities for African American men and Latinas, but not for African American women.

White women fare worse under white male supervision while African American women are most likely to rely on networking to attain positions of power. However, because white males have more opportunities to engage in homo social reproduction, patterns must be examined to determine the extent of the impact across jobs and establishments relative to segregation and, possibly, discrimination. Ultimately, homo social reproduction occurs in all types of groups. The difference is that white males have more opportunities to engage in this set of behaviors, as reflected by lower numbers of African Americans in management and leadership positions. Elliott and Smith (2004) also consider inequalities in workplace power and note that most literature focuses on gender or race, but not on both. The glass ceiling concept introduced an invisible barrier beyond which African Americans attained very modest power and position. Contrary to many opinions, Elliott and Smith (2004) also posit that the control of white men over workplaces in the US is not absolute, and research has never provided empirical evidence of tendencies for homo social reproduction across various groups; as a consequence it remains unclear if white men, as opposed to African Americans, are more likely to engage in supporting others once they rise to power. African Americans can either advance under white men or under similar others. With these situations in mind, it's no surprise that with few "similar others", there are fewer opportunities for African Americans. African American women typically rely on African American men to assist them in attaining management positions. Frequently the men are friends or relatives and work for the same employer (Elliott & Smith, 2004).

Discrimination. Discrimination is one means of creating homo social reproduction. Discrimination is defined as unequal access such as being prevented from entering a job or unequal treatment that often means fewer rewards or opportunities. Those accustomed to receiving access and equal treatment may not even realize how others may be denied the same. Discrimination has been defined by the legal system. The United States Supreme Court recognizes three types of lawsuits related to employment discrimination based on Title VII law. The first of these is disparate treatment where "equals are treated unequally or unequals are treated equally" (Sobol & Ellard, 1988, 383; Roberts, 2010). The second of these theories of discrimination as foundation for legal action is challenges to processes that perpetuate past discrimination. The third of these theories is adverse impact, whereby policies or processes that are not business necessity impact one group more harshly than another (Sobol & Ellard, 1988). This theory of discrimination was initially called "disparate impact" as described in *Griggs v. Duke Power Co.*, 401 U.S. 424, 431-2 (1971).

Adverse impact cases are heavily reliant on statistics to make the prima facie case for discrimination, because the court is not looking for discriminatory motivation; instead, the court requires evidence of truly disparate effects. One legally sanctioned approach to assessing adverse impact is the "4/5 rule" which provides a means for employers to assess their compliance with anti-discrimination legislation. This theory of discrimination is particularly germane to this

literature review, because statistics cited throughout the paper indicate adverse impact on African Americans. Regrettably, the courts have been slow to press for stronger enforcement of laws.

Color-based discriminatory behaviors are a prevailing obstacle to substantive diversity and account for a significant financial burden to organizations that continue to participate in discriminatory behaviors. Failure to comply with the law can be extremely costly not only for individuals and companies but also society overall. In the years 2008-2017, monetary benefits on color-based discrimination cost \$111,800,000 *before* litigation (EEOC, 2018). Kanter (1987) believes that choosing safety/comfort is a defense against a hyperturbulent environment (Barnett, 1987).

...the turbulence and turmoil in the corporate world today, from heightened international competitiveness and survival concerns to mer mania, create another set of obstacles. With greater perceived risk inherent in business activities, there is an accompanying tendency to make “safer” choices of people – to pick the known over the unknown...And, as external change increases, companies prefer to stay with familiar types of people – despite the obvious need for internal change. (Kanter, interview with Barnett, 1987, p. 263)

Covering/Code switching. For many African Americans, the corporate experience is quite challenging. Most African Americans, and indeed most minority professionals, cover up their outside lives and stay “below the radar” to avoid offending the dominant culture. Behaviors that are common include changing hairstyles through chemical alternation or other substantive means, altering skin tone where possible, falsifying ethnicity, changing clothing styles and colors, and controlling spoken language, e.g. speaking a non-English language with others at work. This identity management behavior, called *covering*, results in many African Americans feeling disenfranchised, because they are working within tight social and psychological constraints (Brown, 2016).

Such behaviors cause strife within, as well as between, racial groups. Many African Americans feel compelled to comply with the style of the dominant culture in terms of speaking, appearance, and gestures, in order to avoid reinforcing negative stereotypes. Failure to do so can cost one a job or, at least, a recommendation from a judge to get a larger hairpiece (Banks, 2002), an indignity that is unlikely to happen to whites or other minorities. Banks (2002) cites several court cases that have been decided about the way African American women can appear at work from such notable companies as Blue Cross Blue Shield, the Rockettes dance team, the Internal Revenue Service, and American Airlines. In *Rogers v. American Airlines, Incorporated*, 527 F. Supp. 229 (S.D.N.Y. 1981), the judge suggested that Rogers simply wear a larger hairpiece that fit within the conservative guidelines of the company instead of her braided hair. This court decision seriously limits the ways African American women can wear their natural, chemically unaltered hair. Banks (2002) points out that these issues came to the forefront when the African American women were required to work with customers on the front lines of the organization.

Similarly, Powell (2018) argues that as recently as 2016, the courts have reinforced the continued practice of micromanaging African American women in the workplace. Powell speaks directly to the history of controlling African American grooming after providing a succinct history of women’s hair.

The simple truth is that Black women have been straightening their hair for the last 150 years because it was and has continued to be a necessity for survival in the American economy. The quest for "good hair" has been so visceral that today it is a multi-billiondollar industry. To illustrate, at the turn of the twentieth century, the first female millionaire in the United States made her fortune from the Black hair industry in products designed to straighten the texture of Black hair. (p. 942-943)

In the business sector, 34% of African American women believe appearance rather than ability/potential of the worker plays a stronger role in the promotion process within their organizations. Almost one-fifth of African American women perceive hidden biases to be severe enough to serve as a reason to quit their professional jobs (Hewlett et al., 2005). This belief among African American professionals, that it is necessary to cloak their real identities, and the fact that it is indeed a necessity if they are to last in their jobs, is not only psychologically debilitating, it is also emotionally exhausting, and it speaks against the core of human existence (Hewlett et al., 2005). However, assimilation into the dominant culture is one measure of readiness for upward mobility; as a consequence, assimilation is likely mandatory, (Brown, 2016) and such assimilation requires covering for many.

Unconscious/Implicit Bias. Fundamental attribution error, also called ascertainment bias (Smith, 2005), occurs when the cause of behavior is incorrectly attributed based on beliefs/expectations of the individual making the attribution. "Unconscious bias" has been popularized as the lay language to denote fundamental attribution error. In a decision authored by U. S. Supreme Court Judge Anthony Kennedy, the Supreme Court acknowledges disparate impact as the "unconscious prejudices and disguised animus that escape easy classification as disparate treatment." (Psychological Science, 2015)

Grausz and Mahesri (2018) report the story of an African American woman who was making copies in a print room when she was asked repeatedly for help with office supplies. The underlying supposition was that she must be one of the office supply stockers, because the team of stockers was composed of African Americans. The woman reported being shocked and not being able to respond. She reported being "shook."

Merluzzie and Sterling (2016) found corroborating evidence for the impact of unconscious bias. While studying network-based hiring, they found referrals from others were positively associated with promotions for African Americans. In this study, all interviewees had identical resumes. In Merluzzie and Sterling's (2016) words, "...blacks hired through a referral have similar promotion outcomes to whites hired without referrals" (p.117). The mitigating impact of referrals indicates the need for additional information provided by African Americans that is not required for whites, another indicator of unconscious bias.

Another study by Bertrand and Mullainathan (2003) found notable bias based on names on resumes. By using names that were recognized as uniquely African American and names that were uniquely White, they distributed resumes and counted the number of call backs. After collecting ads for positions from a variety of sources, resumes were matched with employer needs and requirements and submitted. Call back numbers were identical for each race/sex/city/resume quality cell, so call backs were accurately tracked. They found that Whites need to send 10 resumes

to receive a call back while African Americans need to send 15 resumes to receive a call back. They calculated a 50% higher difference in call back rates that they attributed to name manipulation.

Finally, Brown (2016) argues that unconscious bias is central to understanding diversity needs. She acknowledges that unconscious bias is hard wired into each of us, and that it is one reason why it is so difficult to change. It feels “right”, because we have relied on a set of assumptions and patterns for so long. Even if our perception of those assumptions and patterns is faulty, we continue to rely on them, thus driving errors in decision making. Taken together, these studies help to explicate the impact on African Americans of unconscious/implicit bias. Without any intention to discriminate or disadvantage, organizations have been shown to recurrently make decisions that are biased against African Americans.

DISCUSSION

A recurring theme throughout this research literature is the presence of factors over which African Americans, as individuals, have little/no control. All the factors discussed here fall under the control of the organization with respect to bringing about change. Further, because these factors are tacit, they are subtle, and there is no expectation that organizational leaders as well as organizational members fully understand the impact these factors exert with respect to improving diversity management. A consequence of the existence of these tacit factors is the preponderance of responsibility for change rests on organizations, rather than individuals, to drive changes to remove barriers to upward mobility for African Americans. Until organizational leaders engage in intentional behavior toward changing the impact of these barriers, there is little likelihood that African Americans will achieve position parity in executive positions (Thomas, 1992; Thomas & Gabarro, 1999).

Too often, members of organizations explain why certain behaviors persist as “the way we’ve always done it here”, which demonstrates that individuals, rather than organizations, are the focus of organizational change initiatives. This perspective, that this is “the way we’ve always done it here” assumes that all organizational members are knowledgeable about the way things are working on both a formal and informal level and that they “should know” how the organization operates, even if that information is not part of training or organizational socialization. This naïve approach to information dissemination and application overlooks the very foundations of diversity within organizations. Nyak (2015) sees this as a wisdom deficit in leadership. Falkheimer, Heide, Simonsson, Zerfass, and Verhoeven (2015) explain this as the difference between doing the right things, or doing things right. Organizations may refer to efforts resulting in little change as ‘window dressing’.

START HERE! RESOLUTIONS

A resolution is a firm decision to do something. No diversity management program can succeed without a resolute approach. To guide such an approach, we provide the following resolutions, all of which must be included as part of the diversity management program to reduce barriers to African Americans. This literature indicates that top down and intentional organizational change is a more realistic approach to diversity management than affirmative action. Effective

organizations have executive support and participation throughout analysis, strategy creation, implementation, and evaluation of any diversity initiative. We see an example of this from Thomas and Gabarro (1999) as they tell the story of customers refusing to meet with African American representatives. Executive support allowed those customers two choices: 1) Work with the African American representative of the company or 2) Look for another supplier. Such top down support is imperative for real change to take place and for organizations to meet not only the letter of the law but also the intent of the law.

Resolution 1: Executive officers will take an active role.

Smith and Joseph (2010) identified several implications relative to diversity management. For example, in their research white males were not aware of how race and gender factor into everyday work. Because of such differences, organizations must address the variances within data when developing and implementing diversity efforts rather than simply calling for “more of the same” approaches to diversity education. This approach assumes that organizations are collecting diversity data from all development efforts. Thomas and Gabarro (1999) documented monitoring programs. They presented multiple cases from each company that demonstrated how the most effective programs used story telling and data to document their progress.

Resolution 2: Data will be systematically collected, monitored, and used to bring about change in policy and practice. To discover if variance, systemically rooted disparities, (Sturm, 2009) can influence policy and practice, organizations must be prepared to honestly answer the following questions: “1) Where are the barriers to participation? 2) Why do they exist? 3) Are these signals of broader problems or issues, how can they be addressed, where are the openings or pivot points that could increase participation....?” (Sturm, 2009, p. 97). Sturm (2009) proposed research and teaching collaborations in an academic setting which could be reinterpreted as collaborations/teamwork in organizations to help enhance the value of social capital, the loss of which is the result of discrimination, poor inclusion, and other tacit factors investigated here, of marginalized organizational members. Sturm (2009) also proposed a way to address the second-generation dynamics by using root cause analysis, to determine why a problem developed and to track the problem to its source. Another useful analysis is the 5 Whys (<https://isixsigma.com>). This also includes creating and sharing the information as well as developing and linking opportunity through networks. Through the development and sharing of professional, social and knowledge networks, the social capital of all organizational members (including those considered marginalized) can be enhanced to support systems change.

Resolution 3: The company will create a social capital system for all organizational members.

Illustrating the complexity of the problem of African American representation in executive leadership is the intersectionality of many of the drivers of underrepresentation. Companies are not ignorant of the benefits of diversity nor are they ignoring the laws that mandate equity in racial representation. Following the Civil Rights Act of 1964, companies have spent billions of dollars on mentoring with good intentions, minority recruitment, bias training, and support groups (Gurchiek, 2017). Given that African Americans are still underrepresented in executive positions after the expenditure of billions of dollars, one must challenge the efficacy of mentoring with good intentions, minority recruitment, bias training, and support groups as interventions for ongoing inequality for African Americans at that executive level.

Resolution 4: Measure diversity representation at every level and calculate the cost/benefit of diversity in the organization. Every organization needs a starting point, a “Start Here” button that provides an anchor for every diversity initiative. We recommend that every company begin with culture analysis, because this gives a tangible feel to something that most organizations leave uncontested and untouched because it is often perceived as invisible. Culture is not invisible; rather, it is ignored. After educating thousands of graduate business students, who are non-traditional, fully employed managers and military officers who have important roles in notable and large organizations, we have found that virtually none of the students have any basis for completing a deeply honest organizational culture analysis. As noted earlier, this happens, because universities typically teach culture as theory rather than as an application exercise. This is especially important, because our students work for some of the largest and wealthiest organizations in the world. We have found that a straightforward culture analysis gives everyone a place to find a toehold on the challenging work of bringing about diversity changes. In the Appendix, we have included a tool that we have used with hundreds of organizations to help every organization and instructor clarify the analysis of culture. Instructions are included. We have used Johnson and Scholes (1988) Cultural Web model for this application, because it is at once straightforward and easy for new users to understand while setting the stage to capture the complexity of organizational culture through interdependencies. Our students have successfully used this model for many years (McDonald & Foster, 2013).

Resolution 5: The “Start Here” button for our organization will be a deeply honest culture analysis that will provide a beginning framework for diversity changes to take place. Taken together, these resolutions provide an ample and reliable beginning to any diversity initiative that aim to reduce barriers. The study of tacit organizational factors highlights the barriers encountered by African Americans as they work toward improving their work lives. This literature review emphasizes the ambiguities that create barriers to change and development and improved organizational outcomes while perpetuating outdated and illegal systems. Finally, the impact of these factors is the belief among organizational leaders that “they should have known” whether employees were told or not.

CONCLUSION

Given that African Americans have not attained equal representation in executive positions today, and also given that much of the research into why this condition still stands is between 10 and 15 years old, there is a mandate that future research continue to drive toward understanding racial inequality. Even the vocabulary used to explore the lack of parity between workforce population representation and executive representation has continued to evolve. Future research will require the identification of precise measures for each of the tacit factors identified here. As suggested by Stevenson (2014), individual organizational leaders as well as organizational members must be willing to speak candidly about their experiences and be willing to help organizations make necessary changes as they begin the hard work of barriers to advancement for all employees. Organizations must also realize that with increasing diversity in organizations, those coming from other regions and countries have different social, political and racial perceptions which provide different interpretations and sense-making issues for the organization (Kang, et al. 2015). This indicates the importance of determining how perceptions are formed, so they can be addressed at the organizational level.

This paper represents an effort to look more deeply into diversity issues that are still evident as represented by the lack of African Americans in executive positions. Effective changes must be made in organizations by examining the ignored aspects of organizational operations, because this is a more effective approach than implementing another diversity activity which may have limited success. Diversity efforts cannot be improved by blaming white males, and no blame is intended within this review of literature; instead, these authors call on organizations to do as Kanter (1977) suggested - to look to themselves for resolution of this enduring challenge. We call them to, through sincere leadership efforts and resolute diversity initiatives, find the organizational practices, policies and unspoken behaviors that continue to perpetuate workplace inequality.

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Appendix A: Cultural Assessment

Culture dimension	Strengths	Weaknesses
Paradigm	1. 2. 3.	1. 2. 3.
Symbols	1. 2. 3.	1. 2. 3.
Power structures	1. 2. 3.	1. 2. 3.
Organizational Structures	1. 2. 3.	1. 2. 3.
Control System	1. 2. 3.	1. 2. 3.
Rituals and Routines	1. 2. 3.	1. 2. 3.
Stories	1. 2. 3.	1. 2. 3.

*To use this tool correctly, complete each cell with a minimum of three strengths and three weaknesses for each dimension of culture. You can enter as many strengths and weaknesses as you wish into any cell. Let multiple people work on this table. By including more people and varied people, you build accuracy and reliability into your Start Here button. The information can be collected from employees at any level, your observations, your personal experiences, or news articles from well respected and relevant publications. Do not leave any cells empty, because that builds bias into your analysis. Bias means you have error in your analysis. When completed, look at your final table. Did you have any outstanding cells? Do you have any cells with many entries?

After completing the table, prioritize strengths and weaknesses, so you have the top five strengths (things you do well) and the top five weaknesses (things where you really need improvement sooner rather than later). Do not try to address more than this the first time, because you will overwhelm yourself. Compare answers from others and begin searching for common themes toward building consensus. Arrive at a final list of 10 items, still containing five of each strengths and weaknesses. Do your final 10 items accurately represent your original completed table?

Now, using those 10 items, try to fit them into Schein's layers: 1) basic assumptions (e.g. Human rights is not our primary platform; instead, we serve stakeholder outcomes.), 2)

values, (e.g. We value honesty in all of our transactions.) and 3) artifacts (e.g. We maintain a professional environment at all times.) How balanced is your response? Organizational culture is a living system, and when one piece gets out of balance relative to others, you have a clear marker for action.

Now you have a specific and reliable **Start Here!** button for your diversity initiative that is aligned with your organizational values.

A TRIPARTITE ACCEPTANCE MODEL FOR ENTERPRISE 2.0 SYSTEMS

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ABSTRACT

An Enterprise 2.0 system refers to a Web 2.0 platform that an organization can implement in order to allow employees to produce and exchange information through interaction and collaboration. The purpose of this study is to develop and test a theoretical model to explain the factors that influence an employee's intention to use Enterprise 2.0 systems. While traditional models of usage intention have focused on the influence of cognitive factors on individual behavioral intention, this study applies the tripartite model of attitude to explain how the cognitive component, the affective component, and the behavior component have influence on the individual's intention to use an Enterprise 2.0 system. In addition, based on the expectancy-value model, this study explains how an individual's cognitive beliefs are influenced by his/her evaluations of technological attributes of the Enterprise 2.0 system. The results suggest that, in addition to the cognition factors, the affective component (i.e., perceived enjoyment) would increase an individual's intention to use an Enterprise 2.0 system. Further, an individual's cognitive beliefs are influenced by technological attributes, including technological-task compatibility and Enterprise 2.0 effectiveness. The theoretical contributions and practical implications are discussed.

Keywords: Enterprise 2.0, Web 2.0, Technology Acceptance Model, Tripartite Acceptance Model

INTRODUCTION

Web 2.0 systems refer to the community-driven web services where users are more socially connected and are able to collaborate to edit the information (Paroutis & Saleh, 2009). A Web 2.0 system is a platform that provide services to allow users to actively participate and add value to the content (Levy, 2009). Examples of Web 2.0 systems include social networking sites, weblogs, and authorships (Levy, 2009; Paroutis & Saleh, 2009). In contrast to Web 1.0 systems, where content is written, collected, and organized by content managers and content experts, Web 2.0 systems allow users to collaborate to provide content (Levy, 2009).

Based on the idea of applying Web 2.0 systems within organizations, McAfee coined the term "Enterprise 2.0" and referred an Enterprise 2.0 system as a Web 2.0 system that an organization can implement in order to allow employees to produce and exchange information through interaction and collaboration . Enterprise 2.0 systems (e.g., Microsoft SharePoint) are the implementation of Web 2.0 systems within organizations (Levy, 2009; Paroutis & Saleh, 2009). Companies can benefit from implementing Enterprise 2.0 systems (Wijaya, Spruit, Scheper, &

Versendaal, 2011) in aspects such as joint content development with customers (Wagner & Majchrzak, 2006) and knowledge management (McAfee, 2006).

The concept of Enterprise 2.0 has evolved to Enterprise 3.0 and even Enterprise 4.0. As an expansion of Web 2.0, Web 3.0 incorporates into the World Wide Web new trends of technologies including semantic technologies and mobile & location-based services (Minić, Njeguš, & Ceballos, 2014). The result is a more ubiquitous and robust Web environment. An Enterprise 3.0 system is the system that uses Web 3.0 technologies for enterprise purposes (Ahrens & Zašcerinska, 2014; Bassus, Ahrens, & Zašcerinska, 2011). In comparison with Enterprise 2.0, Enterprise 3.0 has two features: semantics and mobility (Ahrens & Zašcerinska, 2014). Web 3.0 converted from a keyword-based search technology of Web 2.0 to a semantic-based technology, which is characterized by searches with context analysis. Therefore, Enterprise 3.0 is able to provide users particular information that is relevant to their contexts/social networks such as particular e-commerce or e-health services (Ahrens & Zašcerinska, 2014; Minić et al., 2014). The mobility of Enterprise 3.0 reflects the ubiquitous feature of Web 3.0 through which information can be accessed anywhere, anytime, on any devices (Ahrens & Zašcerinska, 2014). Further, Enterprise 4.0 is a new enterprise environment of doing business that is enabled by four technologies (big data and associated analytics, cloud computing, mobile connectivity, and social media) (Moreia, Ferreira, & Seruca, 2018). Successful implementation of Enterprise 4.0 involves digital transformation of the organization to integrate technologies with business practices.

A majority of research on Web 2.0 is geared toward explaining individual behavior (e.g., shopping) in Web 2.0 (e.g., Lee, Shi, Cheung, Lim, & Sia, 2011) in non-organizational contexts, or has focused on how to facilitate knowledge sharing using Web 2.0 systems (Matschke, Moskaliuk, & Cress, 2012; Paroutis & Saleh, 2009; Pfaff & Hasan, 2011; Schneckenberg, 2009). Relatively fewer empirical studies investigate Enterprise 2.0 in an organizational context (e.g., Jia, Guo, & Barnes, 2017; Reguieg & Taghezout, 2017). For example, a recent study applies the IS continuance model to investigate the determinants of Enterprise 2.0 post-adoption (Jia et al., 2017). Their model focuses on constructs such as expectation-confirmation and perceived usefulness after adoption. However, before adoption, what makes an individual willing to use Enterprise 2.0 systems in the organizational context remains unclear. The foci of our study is to investigate how individuals in the organizational context respond to an interactive and collaborative web systems. We therefore decide to use Enterprise 2.0 as our study context. Hence, the following research question arises: *What are the factors that may influence an individual's intention to use an Enterprise 2.0 system?*

To answer the research questions, this study uses the tripartite model of attitude (Ajzen, 1984; Breckler, 1984; Eagly & Chaiken, 1993; Piderit, 2000) to identify the factors that influence an individual's intention to use an Enterprise 2.0 system. Also, this study applies the expectancy-value model (Feather, 1982; Fishbein & Ajzen, 1975) to explain how the technological attributes of an Enterprise 2.0 system influence an individual's usage intention. The remainder of this discussion is organized as follows. The next section presents the tripartite model of attitude and the expectancy-value model, both of which underlie this research and build the theoretical model. The research model and the hypotheses are then proposed, followed by the research methodology, the analyses, and a discussion of the results.

THEORY

Information systems research has long studied the factors that influence individual intention to use new information technologies. The majority of research in this area has mainly focused on the cognitive factors ,i.e., the beliefs, perceptions, thoughts, and knowledge structure of an individual (Breckler, 1984; Hong, Thong, Chasaow, & Dhillon, 2011). Several theoretical models such as theory of reasoned action (TRA), technology acceptance model (TAM), and united theory of acceptance and use of technology (UTAUT) have been developed to identify the cognition factors that can influence individual behavioral intention. Research has also categorized these cognition factors, such as perceived usefulness and perceived ease of use, as utilitarian factors (Wakefield & Whitten, 2006) and found that these utilitarian factors significantly influence individual behavior.

However, such emphasis on cognition factors in these models limits the generalizability when applying these models to new systems/contexts that emphasize hedonic value (Van der Heijden, 2004). Hedonic systems are defined as systems that aim to provide self-fulfilling value to the user (i.e., encouraging a fun experience and prolonged usage), while utilitarian systems refer to the systems that aim to provide instrumental value to the user (i.e., increasing task performance and efficiency) (Van der Heijden, 2004). Recent research shows that hedonic factors such as perceived enjoyment (Van der Heijden, 2004), playfulness (Wakefield & Whitten, 2006), and comfort with change by the system (Hong et al., 2011) also govern individual behavior when using a hedonic system. In contrast to a utilitarian information system, Enterprise 2.0 systems allow employees to be socially connected and collaborate on creating information content. We argue that Enterprise 2.0 systems can be viewed as a type of hedonic system because Enterprise 2.0 systems aim to encourage all users to interact and collaborate with each other to create information (McAfee, 2006).

In addition to utilitarian and hedonic factors, habit is another factor that our study considers as having influence on employees' usage intention toward Enterprise 2.0 systems. Prior literature suggests that when an individual has habitual behavior in the past, the individual can automate the process of the behavior and thus will tend to conduct the same behavior in the future (Aarts, Verplanken, & Knippenberg, 1998; Outlette & Wood, 1998; Verplanken & Orbell, 2003). Because Enterprise 2.0 systems are essentially the application of Web 2.0 systems in organizations, their technologies and usage experiences are similar. Thus, we are also interested in investigating how an employee's habitual usage of Web 2.0 systems will influence his or her intention to use Enterprise 2.0 systems.

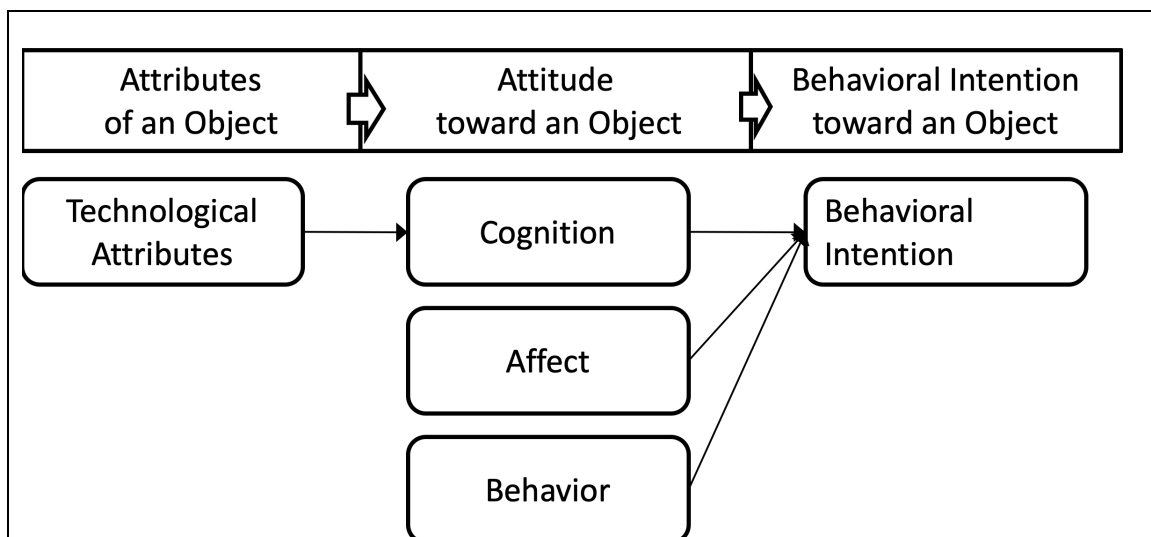
To address the research question, we apply the tripartite model of attitude. Attitude is defined as an individual subject evaluation toward an object (in this study, the Enterprise 2.0 system) (Breckler, 1984). Theoretical frameworks of attitude have proposed that attitudes are structured along three components/dimensions (i.e., the tripartite model of attitude): the cognitive, affective, and conative components (Ajzen, 1984; Eagly & Chaiken, 1993; Piderit, 2000). These three components should be modeled as causes of variation in the global attitude (Zanna & Rempel, 1988).

The cognitive component, or cognition, refers to beliefs, perceptions, thoughts, and knowledge structures of an individual about the attitude object (Breckler, 1984). Because this component considers an individual's beliefs and knowledge of the attitude object, the cognitive component can be viewed as the utilitarian aspect of the attitude (Van der Heijden, 2002). The affective component, or affect, refers to an individual's emotional responses, instinctive feelings, and sympathy toward the attitude object (Breckler, 1984). Literature has suggested that affective cues are potent determinants of attitude changes (Edwards, 1990; Petty & Cacioppo, 1981). The conative component refers to an individual's evaluations that are based on past behaviors (Piderit, 2000). According to self-perception theory (Bem, 1972), an individual changes his/her attitude toward an object based on his/her evaluation of self-observed behaviors and external cues from others (Melone, 1990). The tripartite model of attitude asserts that attitude change may result from an individual's assessment of his/her own and others' behaviors.

Additionally, while traditional models of individual behavior (e.g., TAM, TRA, and UTAUT) provide insights about why an individual uses the system from the perspective of individual cognition, fewer empirical efforts have examined how the technological attributes of an Enterprise 2.0 system contribute to individual perceptions of the system and usage intention. Therefore, this study applies the expectancy-value model to explain how technological attributes influence an individual's intention to use an Enterprise 2.0 system. According to the expectancy-value model, an individual evaluates attributes of an object to form his/her beliefs toward the object (Feather, 1982; Fishbein & Ajzen, 1975). An individual's evaluation of an object's attributes will form his/her cognitive beliefs about the object, which, based on the tripartite model of attitude, influence the individual's global attitude toward the object.

A conceptual model of this study is depicted in Figure 1. In the model, an individual's behavioral intention is the result of the individual's attitude, which includes three components: cognition, affect, and behavior. Furthermore, the individual's cognition (belief) is determined by the technological attributes of the information system (i.e., Enterprise 2.0 in our study).

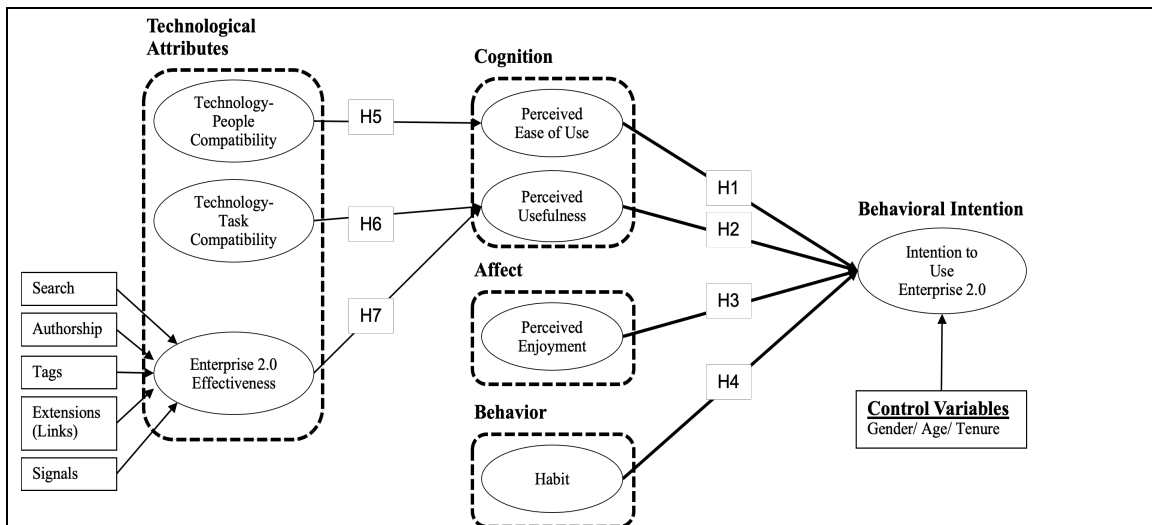
Figure 1. Conceptual Model



RESEARCH MODEL AND HYPOTHESES

Following the theoretical model, the research model is provided in Figure 2. The first factor to be discussed is cognition, which is conceptualized as perceived ease of use and perceived usefulness. The other two components of attitude, affect and behavior, are conceptualized as perceived enjoyment and habit, respectively. With regard to the antecedents of cognition, technological attributes are conceptualized as technology-people compatibility, technology-task compatibility, and Enterprise 2.0 effectiveness. With regard to the antecedents of cognition, technological attributes are conceptualized as technology-people compatibility, technology-task compatibility, and Enterprise 2.0 effectiveness.

Figure 2. Research Model



Following the technology acceptance model (Davis, 1989), we identify perceived ease of use and perceived usefulness as the key cognitive variables. In this study, perceived ease of use refers to the degree to which an individual believes that using an Enterprise 2.0 system would be free of effort (adapted from Davis, 1989). The technology acceptance model states that the information system that is more likely to be accepted by individuals is the system that is easier to use than other systems. When less effort is required for using the system, the individual will judge that he/she can use the system well and therefore will be more willing to engage in the behavior. Therefore, we formulate the following hypothesis:

H1: An individual's perceived ease of use will positively influence his/her intention to use an Enterprise 2.0 system.

Perceived usefulness is defined in this study as the degree to which an individual believes that using an Enterprise 2.0 system would facilitate his/her job performance (adapted from Davis, 1989). The technology acceptance model states that an information system is more likely to be accepted by individuals when individuals believe that use the system would lead to higher job performance. When an individual thinks that for him/her to use an Enterprise 2.0 system would result in valuable outcomes such as enhancing his/her job performance, he/she will be more willing to use the system. Therefore, we formulate the following hypothesis:

H2: An individual's perceived usefulness will positively influence his/her intention to use an Enterprise 2.0 system.

Perceived enjoyment refers to the extent to which an individual believes that the use of the system is fun (Van der Heijden, 2004). Perceived enjoyment represents the affective component because it captures an individual's feelings and emotions toward the use of the system, apart from his/her evaluation of any performance consequences derived from the use (Kim, Chan, & Gupta, 2007). Research shows that perceived enjoyment significantly influences the intention to use (Van der Heijden, 2004) and adoption of (Kim et al., 2007) hedonic-based information systems. Therefore, we formulate the following hypothesis:

H3: An individual's perceived enjoyment will positively influence his/her intention to use an Enterprise 2.0 system.

Habit is defined in this study as the degree to which an individual's use of an Enterprise 2.0 system is automatic in the organization (adapted from Limayem, Hirt, & Cheung, 2007). An individual's intention to perform a behavior can be influenced by the behavior that he/she was accustomed to in the past (Honkanen, Olsen, & Verplanken, 2005; Honkanen et al., 2005; Limayem et al., 2007), because the individual can automate the process of the behavior with ease (Aarts et al., 1998; Outlette & Wood, 1998; Verplanken & Orbell, 2003). In a similar manner, when an individual has had the tendency to use a Web 2.0 system regularly in the past, the individual is more likely to use the system automatically with intuition. Therefore, we formulate the following hypothesis:

H4: An individual's habit (of using Web 2.0 systems) will positively influence his/her intention to use an Enterprise 2.0 system.

Compatibility is defined as the degree to which using an innovation is perceived as consistent with a potential adopter's existing values, needs, and past experiences (Rogers, 1995). Technology-people compatibility minimizes the learning and adaptation time required for users. Thus, the higher the technology-people compatibility, the more likely will users know how to reduce time and effort in using an Enterprise 2.0 system. Therefore, we formulate the following hypothesis:

H5: Task-people compatibility will positively influence perceived ease of use.

Technology-task compatibility is defined in this study as the degree to which an Enterprise 2.0 system assists an individual in performing his or her tasks (Goodhue & Thompson, 1995). In Goodhue and Thompson's work of technology-task fit (Goodhue & Thompson, 1995), they argued that an IT system will be used if, and only if, the functions available to the user support his/her activities. If compatibility exists between software tool functionality and the maintenance task activities, users will feel more satisfied with the tools they use and will be more inclined to use them. Therefore, we formulate the following hypothesis:

H6: Task-technology compatibility will positively influence perceived usefulness.

Enterprise 2.0 effectiveness is defined as the degree to which an individual perceives that an Enterprise 2.0 system can produce intended results. We argue that if an Enterprise 2.0 system is effective, a user will feel that the system will facilitate his/her working. With an effective Enterprise 2.0 system, a user can find what he/she is looking for, feel comfortable sharing information, and/or manage information. Therefore, we formulate that:

H7: Enterprise 2.0 effectiveness will positively influence an individual's perceived usefulness.

THE EMPIRICAL STUDY

Instrument Development

Except for the measure of the Enterprise 2.0 effectiveness construct, all measures were adapted from the literature. The measures for intention to use Enterprise 2.0, perceived ease of use, and perceived usefulness were adapted from Davis's (1989) measures. The measure for technology-people compatibility was adapted from Karahanna et al.'s (1999) measure, and the measure for technology-task compatibility was adapted from Goodhue and Thompson's (1995) measure. The measure for habit was adapted from Verplanken and Orbell's (2003) measure. Because there is no extant measure for Enterprise 2.0 effectiveness, we referred to McAfee's (2006) framework of Enterprise 2.0 functionalities and developed Enterprise 2.0 effectiveness as a formative second-order construct. The technology of an effective Enterprise 2.0 system includes six components (1989): search, link, authoring, tag, extension, and signal. All of the measures use a seven-item Likert type scale. The constructs, definitions, and measures are listed in Table 1.

Table 1. Key Constructs, Definitions, and Measures

Constructs/ Dimensions	Definition	Measures
Technology-people compatibility	The compatibility about which people think or feel between themselves and an Enterprise 2.0 system	Karahanna et al. (1999)
Technology-task compatibility	The degree to which an Enterprise 2.0 system assists an individual in performing his or her tasks.	Goodhue and Thompson (1995)
Enterprise 2.0 Effectiveness	The degree to which an individual perceives an Enterprise 2.0 system can produce intended results	Developed from McAfee (2006)
Search	The extent to which an Enterprise 2.0 system is able to allow a user to find what he/she is looking for	Developed from McAfee (2006)
Authoring	The degree to which an Enterprise 2.0 system is able to let users write for a broad audience	Developed from McAfee (2006)
Tag	The extent to which an Enterprise 2.0 system allows users to categorize content	Developed from McAfee (2006)
Link	The extent to which links in online content are	Developed from

	able to guide users	McAfee (2006)
Signal	The degree to which an Enterprise 2.0 system is able to actively notify users when new content of interest appears	Developed from McAfee (2006)
Perceived Ease of Use	The degree to which an individual believes that using an Enterprise 2.0 system would be free of effort	Davis (1989)
Perceived Usefulness	The degree to which an individual believes that using an Enterprise 2.0 system would facilitate his or her job performance	Davis (1989)
Perceived Enjoyment	The extent to which an individual believes the use of an Enterprise 2.0 system is fun	Van der Heijden (2004)
Habit	The degree to which an individual's use of an Enterprise 2.0 system is automatic	Verplanken and Orbell
Intention to Use Enterprise 2.0	The degree to which an individual plans to apply Enterprise 2.0 systems	(Venkatesh, Morris, Davis, & Davis, 2003)

Data Collection

The population of interest consists of employees who understand the concept of an Enterprise 2.0 system (i.e., have knowledge about an Web 2.0 systems), but do not have past experience with an Enterprise 2.0 system. Our sample consists of employees in the southern part of Taiwan (i.e., the Kaohsiung metropolitan area). We distributed the web link to our questionnaire through local professional communities.

We received a total of 225 responses. After data cleaning, 190 responses are valid for analysis. The participants are an average of 33.5 years old and have worked for an average of 7.5 years. 57.8 percent of participants are male. The majority of participants have a bachelor's (56.8 percent) or graduate (28.6 percent) degree. Of the respondents, 43 percent were from the manufacturing industry, 19.8 percent were from the information technology industry, 10 percent worked for the government, 8.3 percent were from the service industry, another 8.3 percent were faculty or staff in educational institutions, and 9.3 percent were from other industries.

Measurement Validation

The data analysis consisted of two stages, and both stages were conducted using partial least squares (PLS). PLS is appropriate for this study for two reasons. First, PLS is recommended for predictive research models that emphasize theory development (Chin & Newsted, 1999; C. Fornell & Bookstein, 1982; Jöreskog & Wold, 1982). Given that there have been no empirical studies about Enterprise 2.0 effectiveness and its influence on individual perceptions and system usage intention, using PLS in this study is appropriate. Second, because the research model in this study contains both formative and reflective constructs, using PLS to examine the model is appropriate (C. Fornell & Bookstein, 1982; Haenlein & Kaplan, 2004).

The first stage of data analysis examines the measurement model. We first conducted a factor analysis for the measurement model. For the Enterprise 2.0 effectiveness, we conducted factor analysis with items grouped under its second-order construct. Principal component analysis with varimax rotation was used for factor analysis. The tag dimension was removed from the measurement model because the items' average load on other dimensions and all of the factors' loadings of the tag dimension are lower than 0.60. A plausible explanation for this may be that most of the popular Web 2.0 systems that our participants have experience with have embedded the tag function into other functions such as the search, authorship, and link functions. After deleting the tag dimension, the factor structure was obtained as expected (see Table 2 and Table 3).

Table 2. Factor Structure, Composite Reliability, and Cronbach Alpha for Constructs

Construct	Item#	Question	Loading	CR/ α
Technology- People Compatibility	TPC4	Using the Enterprise 2.0 system goes against what I believe computers should be used for.	.639	.96/.93
	TPC5	Using the Enterprise 2.0 system runs counter to my values about how to conduct my job.	.909	
	TPC6	Using the Enterprise 2.0 system runs counter to my own values.	.890	
Technology- Task Compatibility	TTC1	The information provided by the Enterprise 2.0 system would be accurate for my work.	.793	.95/.93
	TTC2	The information provided by the Enterprise 2.0 system would be timely for my work.	.744	
	TTC3	The information provided by the Enterprise 2.0 system would be understandable for my work.	.657	
	TTC4	The information provided by the Enterprise 2.0 system would be sufficient for my work.	.686	
Perceived Ease of Use	EOU 1	Learning to use Enterprise 2.0 would be easy for me	.620	.95/.92
	EOU 2	I would find it easy to get Enterprise to do what I want it to do	.570	
	EOU 3	My interaction with Enterprise 2.0 would be clear and understandable	.661	
Perceived Usefulness	PU1	Using Enterprise 2.0 in my job would enable me to accomplish tasks more quickly	.840	.97/.96
	PU2	Using Enterprise 2.0 would improve my job performance	.869	
	PU3	Using Enterprise 2.0 in my job would increase my productivity	.812	
	PU4	Using Enterprise 2.0 would enhance my effectiveness on the job	.841	

	PU5	Using Enterprise 2.0 would make it easier to do my job	.838	
	PU6	I would find Enterprise 2.0 useful in my job	.786	
Perceived Enjoyment	PE1	I feel the use of Enterprise 2.0 is enjoyable.	.888	.97/.96
	PE2	I feel the use of Enterprise 2.0 is pleasant.	.849	
	PE3	I feel the use of Enterprise 2.0 is exciting.	.847	
	PE4	I feel the use of Enterprise 2.0 is interesting.	.787	
Habit	Hab1	I can find various ways of using Web 2.0 systems to serve my needs.	.880	.96/.94
	Hab2	To be proficient at using Web 2.0 systems is not difficult for me.	.918	
	Hab3	I feel I can use Web 2.0 systems without thinking.	.914	
Intention to Use Enterprise 2.0	IU1	I plan to use Enterprise 2.0 system in the future.	.871	.98/.97
	IU2	I intend to use Enterprise 2.0 system in the future.	.856	
	IU3	I predict I would use Enterprise 2.0 system in the future.	.867	

Table 3: Factor Structure, Composite Reliability, and Cronbach Alpha for the Enterprise 2.0 Effectiveness Construct

Construct	Item#	Question	Loading	CR/ α
Search	Sea1	Through using the search engine of Enterprise 2.0 in my work, I feel that I can easily find relevant knowledge and information.	.833	.97/.96
	Sea2	Through using the search engine of Enterprise 2.0 in my work, I feel that I can easily find high quality knowledge and information.	.801	
	Sea3	Through using the search engine of Enterprise 2.0 in my work, I feel that I can easily find a lot of knowledge and information.	.846	
	Sea4	Through using the search engine of Enterprise 2.0 in my work, I feel that I can easily find up-to-date knowledge and information.	.824	
	Sea5	Through using the search engine of Enterprise 2.0 in my work, I feel that I can easily find important knowledge and information.	.792	
	Sea6	Overall, I think that Enterprise 2.0 provides	.792	

		a very good search engine for me to use for my work.		
Authorship	Aut1	Through using the authorship tool of Enterprise 2.0 in my work, I feel that I can conveniently contribute my knowledge and information.	.785	.97/.97
	Aut2	Through using the authorship tool of Enterprise 2.0 in my work, I feel that I can conveniently share and discuss my knowledge and information with my colleagues.	.790	
	Aut3	Through using the authorship tool of Enterprise 2.0 in my work, I feel that I can conveniently collaborate with my colleagues on creating new knowledge and information.	.821	
	Aut4	Through using the authorship tool of Enterprise 2.0 in my work, I feel that I can conveniently manage documents about my knowledge and information.	.781	
	Aut5	Through using the authorship tool of Enterprise 2.0 in my work, I feel that I can conveniently build virtual community with my colleagues.	.832	
	Aut6	Through using the authorship tool of Enterprise 2.0 in my work, I feel that I can conveniently collaborate with my colleagues on work processes.	.797	
	Aut7	Through using the authorship tool of Enterprise 2.0 in my work, I feel that I can conveniently collaborate with my colleagues on managing projects.	.812	
	Aut8	Overall, I think that Enterprise 2.0 provides a very good authorship tool for me to use.	.723	
Links	Lin1	Through the recommendations mechanism of Enterprise 2.0 in my work, I feel that I can easily find relevant knowledge and information from system-generated recommendations.	.740	.97/.96
	Lin2	Through the recommendations mechanism of Enterprise 2.0 in my work, I feel that I can easily find relevant knowledge and information from my colleagues' recommendations.	.685	
	Lin3	Through the recommendation mechanism of Enterprise 2.0 in my work, I feel that I can	.712	

		easily understand my colleagues' comments and opinions toward a particular content.		
	Lin4	Through the recommendations mechanism of Enterprise 2.0 in my work, I feel that I can easily collect relevant knowledge and information.	.712	
	Lin5	Overall, I think that Enterprise 2.0 provides a very good recommendation mechanism for me to use.	.733	
Signal	Sig1	Through the RSS subscription of Enterprise 2.0 in my work, I feel that I do not need to spend a lot of time to find updated information.	.752	.96/.95
	Sig2	Through the RSS subscription of Enterprise 2.0 in my work, I feel that I will not receive irrelevant updated information.	.783	
	Sig3	Through the RSS subscription of Enterprise 2.0 in my work, I feel that I can subscribe the updated information that I like.	.773	
	Sig4	Through the RSS subscription of Enterprise 2.0 in my work, I feel that I can receive updated information in a timely manner.	.763	
	Sig5	Overall, I think that Enterprise 2.0 provides a very RSS subscription tool for me to use.	.771	

We also assess the reliability, convergent validity, and discriminant validity for all measures. Two reliability indices show that all of the measures are reliable. The Cronbach's alpha for each first-order construct is greater than .70, indicating that the scores obtained from the items of the same measure are internally consistent (Cortina, 1993). In addition, the composite reliability (Claes Fornell & Larcker, 1981) for each first-order construct is greater than .70, showing that more than half of the variance of the measure consistently captures that same concept (Bagozzi & Yi, 1988; Garver & Mentzer, 1999). The composite reliability (CR) and Cronbach's alpha for each construct are listed in Table 2 and Table 3. The average variance extracted for each first-order construct is greater than 0.50 (Claes Fornell & Larcker, 1981), suggesting the measure items for each construct are convergent in capturing the same concept (i.e., convergence in measurement; Bagozzi, 1981). The AVEs are listed in Table 4. The square roots of AVE and correlations are summarized in Table 4. The square root of AVE for the construct is greater than its correlations with other constructs (Claes Fornell & Larcker, 1981), indicating adequate discriminant validity.

Table 4: Assessment of Reliability, Convergent Validity, and Discriminant Validity

	Mean (SD)	AVE	TPC	TTC	Sea	Aut	Lin	Sig	EOU	PU	PE	Hab	IU	Gen	Age
TPC	3.75 (1.40)	.74	.86												
TTC	4.63 (1.27)	.85	.76	.92											
Sea	5.08 (1.29)	.86	.69	.71	.93										
Aut	4.97 (1.34)	.81	.65	.71	.63	.90									
Lin	4.87 (1.25)	.87	.64	.73	.74	.77	.93								
Sig	5.04 (1.30)	.85	.60	.71	.71	.71	.73	.92							
EOU	4.78 (1.34)	.87	.62	.66	.60	.55	.56	.58	.93						
PU	4.78 (1.35)	.86	.79	.31	.71	.67	.68	.61	.60	.93					
PE	4.59 (1.41)	.90	.54	.55	.66	.52	.58	.60	.64	.61	.95				
Hab	5.06 (1.39)	.90	.33	.43	.33	.43	.44	.42	.55	.31	.32	.95			
IU	4.61 (1.44)	.96	.57	.59	.56	.55	.52	.53	.49	.60	.49	.19	.97		
Gen	1.43 (0.49)	—	.00	.10	.08	.06	.13	.09	-.03	.09	.19	-.04	.11	—	
Age	3.08 (1.44)	—	.12	.02	-.05	-.02	-.02	.03	.02	.02	-.04	-.14	-.01	-.11	—
Ten	2.85 (1.78)	—	.21	.07	.04	.05	.05	.08	.04	.12	.01	-.11	.11	-.01	.72

*The shaded diagonal values are the square root of the average variance extracted for each construct.

**Constructs in this table include: Technology-People Compatibility (TPC), Technology-Task Compatibility (TTC), Search (Sea), Authorship (Aut), Links (Lin), Signal (Sig), Perceived Ease of Use (EOU), Perceived Usefulness (PU), Perceived Enjoyment (PE), Habit (Hab), Intention to Use Enterprise 2.0 (IU), Gen (Gender), Age (Age), Ten (Tenure).

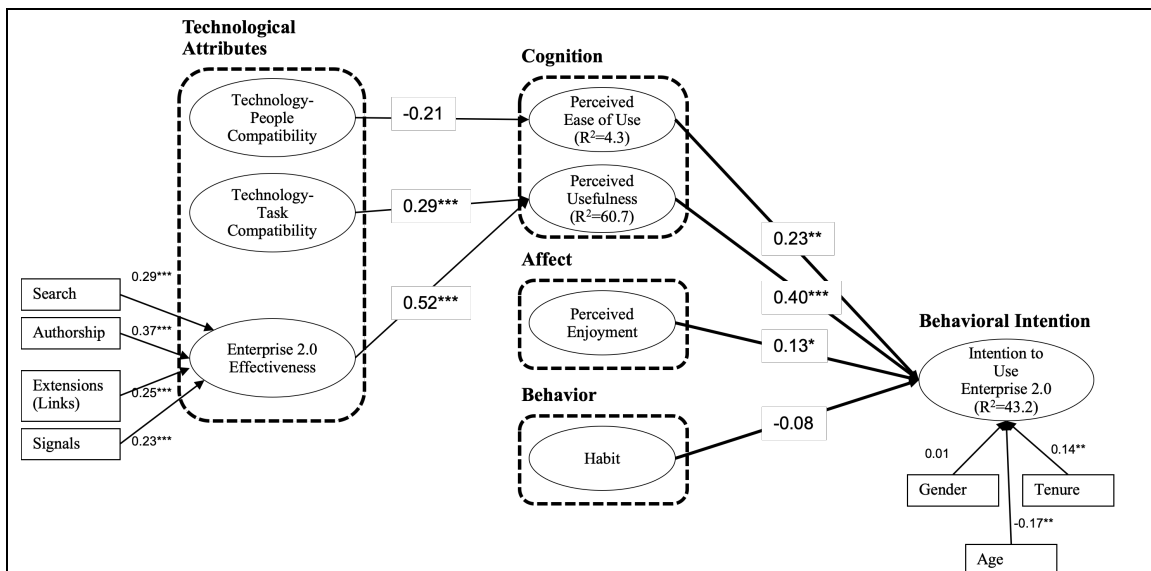
RESULTS

The second stage of analysis is to test the hypotheses. PLS assesses the significance of the hypotheses and the explanation power for validating research models (Xu, Teo, Tan, & Agarwal, 2009). A bootstrapping technique is used for examining the hypotheses (Chin, 1998). We used SmartPLS to re-estimate path coefficient and standard errors through re-sampling 1500 subsamples. The results of the research model are presented in Figure 3.

The R^2 value, or the explained variance, is used to assess the prediction power of the research model (Barclay, Higgins, & Thomson, 1995). The results indicate that 43.2 percent of the variance of intention to use Enterprise 2.0 is explained by the research model. Only 4.3 percent of the variance in perceived ease of use is explained by technology-people compatibility. Also, 60.7 percent of the variance in perceived usefulness is explained by technology-task compatibility and Enterprise 2.0 effectiveness.

The results show that perceived ease of use ($\beta=.23$, $p<.01$, one-tail test), perceived usefulness ($\beta=.40$, $p<.001$, one-tail test), and perceived enjoyment ($\beta=.13$, $p<.05$, one-tail test) significantly predict intention to use enterprise 2.0, providing support for H1, H2, and H3. The path from habit to intention to use enterprise 2.0 is insignificant. Therefore, H4 is not supported. The results show that technology-people compatibility does not predict perceived ease of use regarding an enterprise 2.0 system, rejecting H5. Technology-task compatibility ($\beta=.29$, $p<.001$) and Enterprise 2.0 effectiveness ($\beta=.52$, $p<.001$) significantly predict perceived usefulness, providing support for H6 and H7. Among the four control variables, age ($\beta=-.17$, $p<.01$, one-tail test), education ($\beta=-.14$, $p<.001$, one-tail test), and tenure ($\beta=.14$, $p<.01$, one-tail test) are significantly associated with individual intention to use Enterprise 2.0 systems.

Figure 3. Results of Path Analysis



DISCUSSION

Contributions for Research

Our study confirmed several important hypotheses related to our theoretical model of Enterprise 2.0 usage intention. Complying with the extant literature, both utilitarian factors, or the cognitive component, (i.e., perceived ease of use and perceived usefulness) increase an individual's intention to use an Enterprise 2.0 system (H1 and H2). In addition, our study suggests that the affective component, or perceived enjoyment, would increase an individual's intention to use an Enterprise 2.0 system (H3). However, the behavioral component (i.e., habit) has no impact on an

individual's intention to use an Enterprise 2.0 system (H4). During data collection, we seek participants who have used Web 2.0 systems but did not have usage experience of Enterprise 2.0 systems. As a result, our habit measure only examined employees' habitual behavior of using Web 2.0 systems, but not Enterprise 2.0 systems. This indeed is one limitation of this study. Based on the sample and results, we may only suggest that the habitual behavior of using Web 2.0 will not lead to the intention to use Enterprise 2.0.

With regard to the influence of technological attributes on an individual's intention to use an Enterprise 2.0 system, we found some interesting results. Our model suggests that technological-task compatibility and Enterprise 2.0 effectiveness would drive employees to perceive enterprise 2.0 systems as useful (H6 and H7). However, technological-people compatibility has no impact (H5). We suspect that the nature of our sample (no experience in Enterprise 2.0 systems) is the root cause to such result.

The results from control variables, particularly tenure in the organization, are interesting and have potential for future research. When an employee has more years of experience in an organization, the employee may be more willing to use Enterprise 2.0 systems. Probably the employees with higher tenure are more likely to expect the benefits from the use of enterprise 2.0 systems than others.

Implications for Practice

Our results also have several implications for those organizations that have implemented or are planning to adopt Enterprise 2.0 systems. Our research model helps managers to understand how the technological attributes of Enterprise 2.0 systems would motivate employees' intention to use Enterprise 2.0 through influencing employees' cognition and affection. This study has two main implications for practice.

First, as suggested by prior IS literature, perceived usefulness is still the most influential antecedent to usage intention. Further, our data shows that the main ingredients in the formulation of employees' usefulness perception include Enterprise 2.0 effectiveness and technology-task compatibility. The result suggests that the four main features of Enterprise 2.0 systems—authorship, search, link, and signal—all contribute to the effectiveness of the system to employees. As for enhancing technology-task compatibility, organizations should also maintain and manage the content available in the system to make sure that the system provides accurate, timely, and sufficient information for employees' work.

Second, besides perceived usefulness and ease of use, perceived enjoyment of the system is significantly associated with intention to use Enterprise 2.0 systems. Therefore, organizations that implement Enterprise 2.0 should consider how to make their employees enjoy their usage experience (i.e., the hedonic benefits), in addition to the utilitarian value such as useful functions and an easy-to-use interface.

Limitations and Future Research

As discussed earlier, the sample nature (i.e., respondents with no experience in Enterprise 2.0 systems) has limited our findings on H4 and H5. We suggest that future research could study the employees who have Enterprise 2.0 usage experience and investigate how their habit strength influences their continued usage behavior.

In addition to our sample nature, our data was collected at one point in time and thus cannot suggest the influence of the factors on intention to use Enterprise 2.0 in a longitudinal setting. Indeed, the “snapshot” data in our study may not be appropriate for examining the influence of the factors that need time to take effect, such as past behavior (i.e., habit). Future research may contribute to the literature by investigating the influence of habit on Enterprise 2.0 usage intention in a longitudinal time frame.

We did not assess participants’ actual usage behavior toward Enterprise 2.0 systems, although TRA has suggested that behavior intention would influence actual behavior. Finally, while this study examined the influence of the tripartite components, we did not examine the influence of individual characteristics or organizational factors on individual intention to use Enterprise 2.0 systems.

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WIN OR LOSE: A STUDY ON THE EFFECTS OF VIDEO GAME VIOLENCE

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ABSTRACT

As more types of media and software are being developed and introduced to the world, people begin to question how or if these media can affect humans and their behaviors. Since the 1970s, there have been many controversies surrounding a certain type of software – video games. From games being pulled off shelves due to public outrage to lawsuits being filed, video games have been the subject of blame for a few atrocities committed over the past twenty or so years. Several studies indicated that video games, whether violent or not, influence the behavior of individuals interacting with the artifacts. However, extant research found that video games did not trigger significant negative behaviors. This study aims to assess if there is a significant relationship between watching simulated violence in the form of video games and a negative emotional state. We examined the impact of watching short video clips of video game play by administering the Self-Assessment Manikin (SAM) on human subjects to gauge their emotional state, ranging from negative to positive emotional state. The games were chosen based on several criteria suggested by the Entertainment Software Rating Board (ESRB), which governs the content ratings in a game and assigns an age requirement for purchase and use. The results indicated that there is no huge deviation in emotional state from viewing one game to another. However, some subjects showed a very slight adverse reaction of feeling uncomfortable to viewing the more violent video game play.

Keywords: Emotional state, Media violence, Video games, Video game violence, SAM, ESRB

INTRODUCTION

Over the last twenty years, there has been an exponential increase in the number of devices and types of media available for entertainment use (Almeida, Lima, Pereira, & Silva, 2018; Xavier, Pitangui, Silva, Oliveira, Beltrão, & Araújo, 2015). From cell phones, which are used multiple times a day, to television and video games, people are constantly exposed to a variety of media and software. The effects of this type of non-stop digital interaction on humans has begun to be explored by researchers (Boyd, 2014; Boyd and Ellison, 2010). However, in many cases, the studies have focused on television or social media rather than other media types. More recently, there has been an interest to examine video game software, specifically whether or not it has the potential to change a person's mood, behavior, or actions. This interest is typically sparked when either a game is released that has questionable material for minors (such as most of the Grand

Theft Auto entries) or if a tragic event took place where the perpetrator was shown to have played violent video games.

A prime example refers to the 1999 Columbine High School massacre, where media outlets discussed that violent video games may have had an impact on the perpetrators (Giumetti and Markey, 2007). While the motivations were never quite clear, the media focused on the fact that the two students loved a certain video game – Doom. Doom is a first-person shooter video game where the main protagonist's goal is primarily shooting demons from Hell. The two perpetrators often discussed the game and even compared the other students of the school to the demons in the game. The game also gives users the ability to create levels, and it was rumored that the two perpetrators had created a level where they re-created the school layout in order to practice. However, none of the game levels examined by the police indicated those rumors to be true. Parents of some of the students attempted to sue the video game makers, but these efforts were all unsuccessful. Four years later in 2003, another murder took place by a 16-year old (Wilson & McGill, 2018; Radford, 2002) who attempted to blame a popular video game – Grand Theft Auto III. During court, the perpetrator pled insanity due to being obsessed with the video game. Eventually, the perpetrator withdrew his insanity defense and was convicted of murder. These are only a couple events where video games were pushed into the spotlight for horrific events that took place. This brings to light the concept that there may be a connection between one's emotional state before and after viewing violent video games. As such, this study explores whether the level of violence in a video game affects the emotional states of those viewing the video game play. Thus, the research question is "Do violent video games induce negative emotions?"

The remainder of this paper is organized as follows. In the background section, we provide related works relevant to this research. The approach section discusses the research framework and the methodology used to examine the impact of violent video game play on participant emotional states. We conclude the paper by presenting the experimental results and providing a conclusion and future research directions.

BACKGROUND

A number of studies indicated environmental stimuli, such as vision, olfactory, gustatory, auditory, and vestibular, are known to influence individual emotional states, which in turn impact human behavior (Basch & Fisher, 1998; Lane Chua, & Dolan, 1999; Muramatsu & Hanoch, 2005; Dolan, 2002; Isen 2004; Carstensen et al., 2011). Whether it is positive or negative, various research has indicated that individuals' emotional state plays an important role in influencing how they behave and act (Weiss, & Cropanzano, 1996; Junça-Silva, et al., 2018; Bower, 2012; Core & Huntsinger, 2007). These studies also show that people's judgments generally influenced by their immediate emotional states at the time of decision-making. For instance, Clore & Huntsinger (2007) described that emotion influences the content and style of thought. In a similar study, Bower pointed out that the emotional state at a particular time could influence judgment through biased retrieval of related information from the memory (Bower, 2012). Video games are powerful and new area of research on their impact on human behavior.

Arguably, video games are one of the best technological tools ever created for that can be used for both entrainment and education purposes. Unfortunately, with the growing trend of violent acts

occurring throughout the world and especially our own country, there has been an increased desire to determine the cause. One of the most common explanations cited has been violence in media – from movies and television shows to video games. The latter has often been the media that is most blamed for the various atrocities committed over the past thirty years since it has an interactive element that the other types of media do not. It is interesting to note that while there have been several news articles or productions that put the spotlight on video games as the source of the increased aggression in gamers, research studies haven't reached to a definitive conclusion as to whether video games triggers violence.

A number of studies indicated that video games whether violent or not play an important role in influencing the behavior of individuals interacting with the artifacts (Dominick, 1984; Fumhe & Naidoo, 2015; Welsh, 2016). For instance, Welsh as raised interesting questions about the impact of video games on violent including “*How could playing a digital game about killing be involved in killing? How does this virtuality participate in reality?*” (Welsh, 2016, p. 12).” Similarly, a study conducted by Fumhe and Naidoo in 2015 examined the implications of violent video games and their effect on player aggression (Fumhe & Naidoo, 2015). The study used the GAM (General Aggression Model) research model on 101 subjects in South Africa to determine the level of aggression shown by players and how it related to violent video games. Their study also investigated the relationship between excessive gaming, pathological gaming, and if the interactivity of the game such as improved graphics or controllers that resembled more realistic items such as guns affected aggressive behavior. Their findings somewhat supported two of their hypotheses in that excessive gaming can lead to pathological gaming, and that pathological gaming can lead to very slightly more aggressive tendencies. However, their third hypothesis that the increased interactivity of improved graphics or more realistic controllers was not supported. This is contrary to a study done by Kim et al, which indicated that using realistic controllers did increase player aggression and physical presence in the virtual environment (Kim et al., 2011).

Another study by Ashbarry colleagues explored the idea of blood and gore affecting the arousal level of gamers (Ashbarry et al, 2011). Their findings showed that subjects that were playing a game that had gore activated did not have higher levels of arousal than those who had gore turned off. While the study done by Robert and Brodbeck (2008) determined that there is not an increase in aggressive behaviors among video gamers, they did find that recreational video gamers did show a somewhat higher level of aggression than non-gamers (Hudak, 2003). On the other hand, various research findings indicated that video games do not trigger significant negative behavior (Bushman & Anderson, 2002; Thayer, 2017; Anderson et al., 2003). For instance, a study by Alexander Thayer found that the Columbine school shooting had little to no impact on the actual views discussed by the editorial staff at news outlets (Thayer, 2017). The opposite was true since violent video games were not to blame quite as often as they were previously. This paper focuses on verifying the validity of these claims and as to whether there is any merit to them.

APPROACH

Video Game Selection

Whether television, movies, or in this case, video games, one of the first steps in determining how people can be affected or influenced by violence in any media is to decide on the levels of violence

that should be shown to those involved in the study. This can be a rather sensitive subject for parents as most do not wish for their children to experience or commit acts of violence – even in the virtual world. Therefore, this study will only recruit adult subjects that are eighteen or older as to avoid upsetting parents or potentially causing too much anxiety for younger audiences. To gauge the reactions of the subjects, the study will be using three different levels of violence: extreme, neutral or mild violence, and completely non-violent. We use the video game ratings provided by Entertainment Software Rating Board (ESRB), an “American self-regulatory organization that assigns age and content ratings to consumer video games” (ESRB Ratings, 2019). Interestingly, the ESRB was created in 1994 due to the backlash of video games with controversial content such as excessive violence and other mature content (Kohler, 2009).

Violent Game Selection

Originally, the study was incorporating a different type of game – one that dealt more with gun violence. However, first person shooters are some of the most popular video games available right now based on the sales figures of recent years. As a result, many players have, unfortunately, become very desensitized to gun violence in video games. Therefore, showing footage of a game like Call of Duty may not have much of an impact. Therefore, for the extreme violence game, *Mortal Kombat XL* has been chosen for the Sony PlayStation 4 console. *Mortal Kombat XL* is a 2.5D fighting game with signature gameplay features such as ‘fatalities,’ ‘brutalities,’ ‘fatal blows,’ and ‘krushing blows.’ *Mortal Kombat XL* is rated M for Mature by the ESRB and uses the following criteria as reasons for the rating: “Blood and Gore, Intense Violence, Strong Language, Use of Alcohol” (ESRB, 2015). The primary reasons for choosing this game is for the first two descriptions by the ESRB. Due to it being a fighting game that includes extremely gruesome ways to kill opponents, it is one of the most violent, non-shooting games available for consumers to purchase currently.

Neutral Game Selection

For the neutral or mild violence game, *Crash Bandicoot N. Sane Trilogy* was selected for the PlayStation 4. *Crash Bandicoot N. Sane Trilogy* is a multi-level game with signature gameplay features such as spinning, jumping, and smashing crates. For this level of violence, it was necessary that a game was chosen that was not viewed as overly violent while at the same time, it not being entirely non-violent. The ESRB rated the game E for Everyone (ages 10+) based on the criteria of the game having “Cartoon Violence” and “Comic Mischief” (Entertainment Software Rating Board, 2007). The level of violence and mischief is on the level of what one would expect to see in an early morning children’s television show or movie. There is no blood or gore involved, and the violence is often viewed in a very comical way.

Decorous Game Selection

Finally, *Flower* (also for the PlayStation 4) was chosen for the completely non-violent video game. *Flower* is a multi-level game with signature game play features such as controlling wind speed and direction and changing flower petal pitch and roll. In today’s market, a game such as *Flower* is incredibly unique and rare. It is often difficult to find many console video games that have absolutely no violence at all. Even games that many would consider to be for children such as

Super Mario or Sonic have cartoon violence such as destroying enemies or getting hit by enemies themselves. While most people would not consider that to be very violent, it still contains a small level of violence which many label as “cartoon” or “comic” violence. On the other hand, *Flower* has none of those elements. It is a video game about flower petals flying through beautiful vistas bringing darkened areas to life. The ESRB has no descriptors for it like they normally would for other video games; it is simply rated E for Everyone (Entertainment Software Rating Board, 2013, 2015).

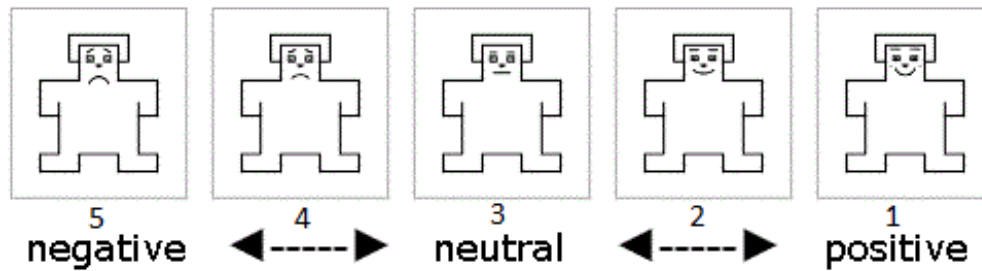
Procedure

Self-Assessment-Manikin (SAM) was used to rate the emotional scale of the users (Bradley & Lang, 1994; Irtel, 2007). SAM is a non-verbal pictorial assessment technique that directly measures the pleasure (valence), arousal, and dominance associated with a person's affective reaction to a wide variety of stimuli (Bradley & Lang, 1994). SAM measures the positive, neutral, and negative emotional states associated with viewing each set of images (see Figure 1). The positive state shows SAM smiling at right end. Neutral figure in the middle represents no change of emotional state. The negative state shows SAM frowning at the left end. We chose to use SAM as it is language-independent and has been effectively administered to both children and adults (Bynion & Feldner, 2017). Thus, our approach to assessing the impact of violent video games on participant's emotional state allows for variation in backgrounds and age. Additionally, SAM has been previously used in extant research on video game user emotional states to assess the impact of mental health messages (Poppelaars, Lichtwarck-Aschoff, Kleinjan, & Granic, 2018), the impact of color (Joosten, Van Lankveld, & Spronck, 2010), the influence of movement (Pasch, Bianchi-Berthouze, van Dijk, & Nijholt, 2009), and the impact of age and game type (Nacke, & Lindley, 2009).

After the video games were selected, the implementation phase began. All procedures employed in the study comply with the ethical standards on human experimentation stated in the Institute of Review Board (IRB) application at a public university in the Southeastern United States. The games were purchased and the video footage captured of typical video game play. Flyers and emails were sent out and distributed to gain participants for the study. The goal was to obtain forty subjects of eighteen years or older as to try to gain as much data as possible with a valid sample size. The subjects were informed of the potential risks involved in the study such as possibly feeling some discomfort or anxiety at seeing extreme violence as well as a potential risk of a reaction due to epilepsy. While the chances of these occurring are small, they remain a risk to which the participants were informed.

A website was created that served two purposes: one contained the videos that were used for the study and a separate website described the study and provided information about the video games used in the study. The website used for the study included the potential warnings as described, the video of video game play itself, and a button to click on that displayed the next video after the Self-Assessment Manikin (SAM) 5-point test was given to the subject. The SAM test was used to determine the emotional state of the subject and includes five images of facial expressions ranging from negative to positive emotions. Figure 1 below shows the SAM test image that was shown to the subjects.

Figure 1. The SAM scale that was used to measure subject's emotional state.



Study Design

The goal of this study was to examine the effects that video game violence has on subjects – whether watching video game violence influenced how subjects feel, their mood, and behaviors. Varying levels of violence ranging from extreme to completely non-violent were used to determine this impact through the subject watching gameplay footage of video games. The Self-Assessment Manikin (SAM) scale was used in between each video.

This study employed a within-subject study design. To measure emotional ratings more precisely, mean scores were used instead of the median. In addition, normality was assumed even though some of the trials did not pass the normality test (Erceg-Hurn and Vikki, 2008; Lovelace & Brickman, 2013). The conditions were ordered using an incomplete/partial counterbalancing using Latin square model to reduce the learning effect, biases and tiredness due to usage order. For baseline emotional value, each participant was asked to rate their emotional state prior to being exposed to the emotional design elements. After that, all of the three video games (Neutral, Violent, or Decorous) were presented to the each of the participants (see Figure 2). The dependent variable (DV) was emotion rating (i.e., 1=strongly positive, 2=positive, 3=neutral, 4=negative, and 5=strongly negative). Therefore, one-way repeated measures ANOVA was used to analyze the statistical significance of the effects of video game violence.

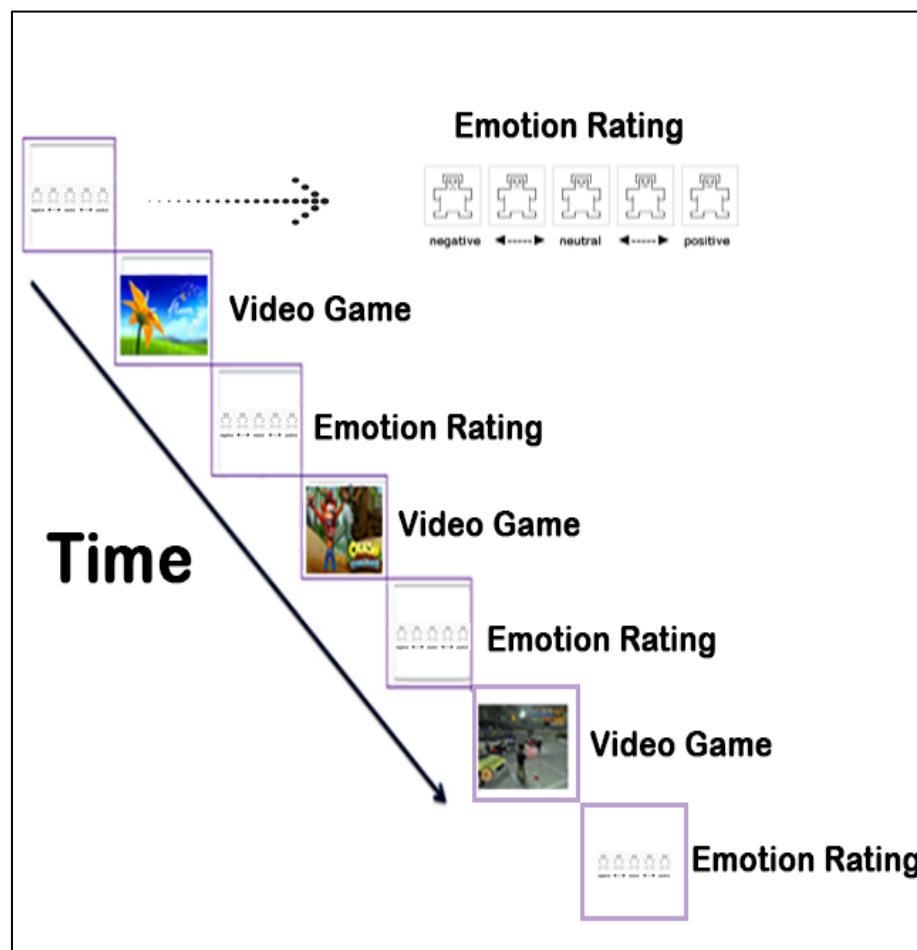
Figure 2. The website prototype



Figure 2 shows the website prototype which was created as a part of the study. The prototype shows the link for consent form document, which informed the potential risks involved in the study such as possibly feeling some discomfort or anxiety at watching extreme violence as well as a potential risk of a reaction due to epilepsy. Additionally, the website also includes the video, the play button, and the next button that displays the next video after the Self-Assessment Manikin (SAM) 5-point test was given to the subject.

Figure 3 shows the detailed process, which starts capturing the baseline emotion, before conducting the study. Each participant was asked to rate their emotional state prior to being exposed to the video game. After each video game, participants were asked to their emotional state.

Figure 3. The process of emotion ratings



RESULTS

In total, thirty-four participants were recruited for this study. As presented in Table 1, twenty-seven of participants were males and the rest were female participants. In addition, thirty of the participants were with age ranging between 18 and 35. There have been positive results based on the smaller sample size thus far. For the most part, there is no direct correlation between video

game violence and the potential for negative effects it has on the emotional states of the subjects. However, a few subjects did feel somewhat uncomfortable seeing the *Mortal Kombat* (violent) game footage due to the brutal actions of the player character during the Fatality section of the video.

Table 1. *Mortal Kombat* Data

Categories	Description	Number of Subjects	Percentage
Age Range	18-35	30	89%
	36-64	4	11%
Gender	Male	27	79%
	Female	7	21%
SAM-scale Rating	1	5	15%
	2	10	29%
	3	15	44%
	4	4	12%
	5	0	0%

A majority found the footage of the non-violent video game (*Flower*) as well as the neutral game (*Crash Bandicoot*) to be entertaining and made the subjects feel a happier emotional state. Roughly 67% of the subjects said they felt a 2 or 1 on the Self-Assessment Manikin 5-point scale which indicates they felt primarily “happy” or “positive” after viewing *Flower* footage. The other 33% of subjects remained “neutral” (a score of 3) with no positive or negative reaction after viewing the footage.

On the other hand, *Mortal Kombat* was poised to be the most interesting and divisive video game that was tested. In order to test how different age groups might respond the footage, the age range is large with subjects ranging from 18 years old to 64 years old. Of the thirty-four subjects thus far, 11% were aged 50 or older with the remaining 89% of subjects ranging from 18 to 35. Our goal was to see if age was to be a major influence on whether the subject was disturbed or uncomfortable viewing the *Mortal Kombat* footage. The subjects aged 50 or older were more uneasy viewing the video game, and as a result, all four scored a four on the Self-Assessment Manikin scale. A four is not the most negative option on the scale, however, it is very close. Unfortunately, due to the small sample size of older subjects, we were not fully able to confirm our second hypothesis that age is a factor in how one might react to such footage.

As shown in Table 1, the remaining 89% of subjects aged 18 to 35 years old voted “neutral,” “mostly positive,” or “very positive.” Of the thirty other subjects, 50% chose three (“neutral”), 33.3% chose two (“mostly positive”), and the remaining 16.7% chose one (“very positive”) on the SAM-scale. Based on Table 1, 44% of subjects were on the positive end of the SAM-scale, 12% of subjects were on the negative end, and 44% were neutral.

Table 2. Descriptive statistics for SAM scores

	Mean	Std. Deviation	N
Baseline	2.3529	1.20309	34
Neutral	2.0588	.23883	34
Violent	2.5294	.89562	34
Decorous	1.9706	.45960	34

As seen in Table 2, the overall average of SAM scores for each game hovered around two on the test, which is on the happy side of the spectrum. The overall average of all the tests was 2.23, which is also on the “happy” side of the SAM test. We anticipated the overall average of each game to be slightly higher than what we observed. As an overall average, we expected to see around a 2.50 rating on the SAM scale; however, we observed an average of 2.20 instead.

Figures 4 through 7 show where the average was for each test as displayed on the SAM scale itself. This is simply an easy way to visualize where the overall average was for each test.

Figure 4. Average of Test #1 on SAM Scale (Baseline)

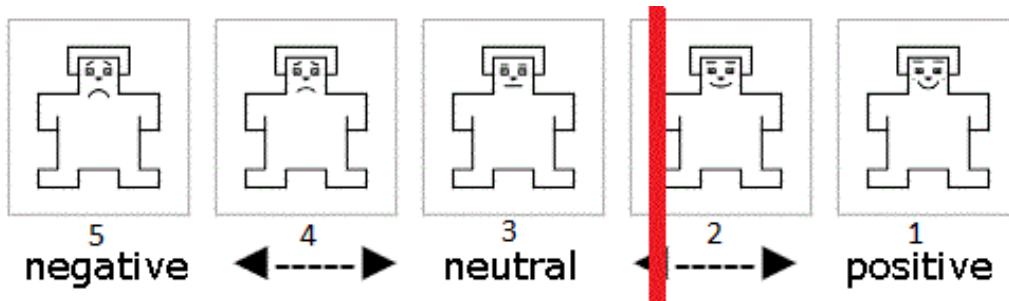


Figure 5. Average of Test #2 on SAM Scale (Neutral game)

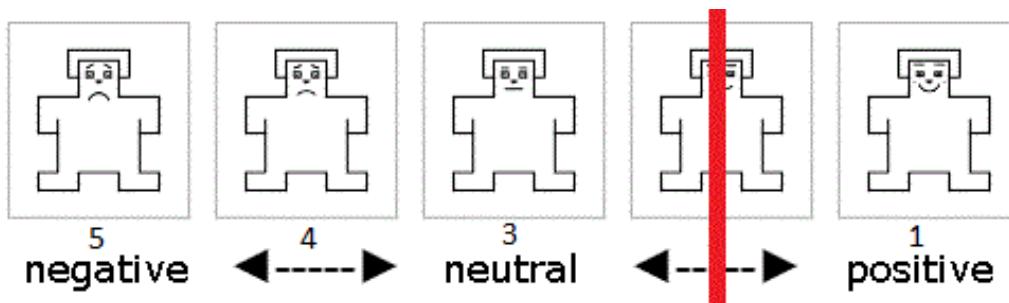


Figure 6. Average of Test #3 on SAM Scale (Violent game)

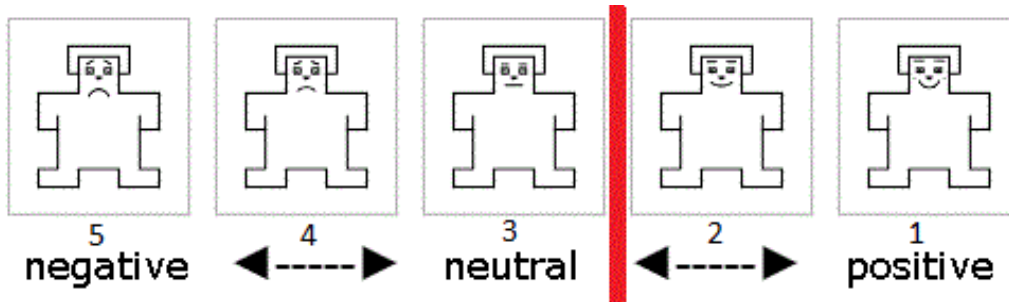
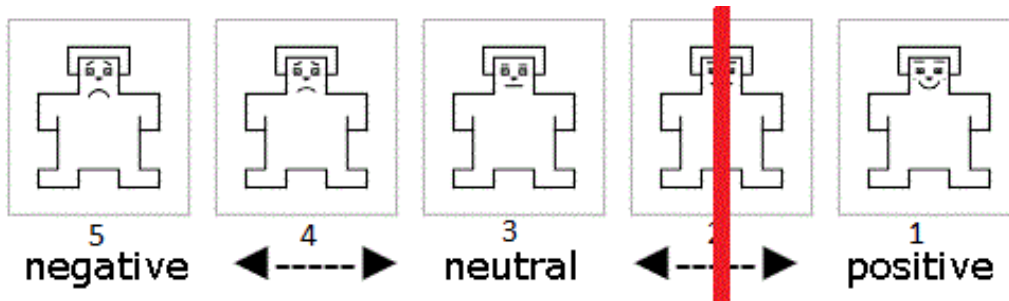


Figure 7. Average of Test #4 on SAM Scale (Decorous/Non-Violent game/)



The largest shift occurred when viewing Mortal Kombat XL (the violent game). From the first game footage (neutral) to the second game footage (violent), the average shifted 0.47 points to the left, which means the average was a bit more negative. After viewing the non-violent game, the average shifted back to the right by 0.56 points. This shows that watching the violent game footage did have a small effect on the emotional states of the subjects. Figure 8 shows this shift.

Figure 8. The shifting of SAM averages



The descriptive statistics depicts difference in the mean score. However, further data analysis was required to determine the statistical significance. As stated in the Study Design, one-way repeated measures ANOVA was used to analyze the statistical significance of the effects of video game on violence. The SPSS ANOVA analysis of the impacts of video game violence on violence behavior indicated that there is no significant difference between video games and violent behavior, $F(3,2.3)=4.23$, $p(0.07) > 0.05$. In other words, the average shift between each game was very small, implying that impact of violent video games has little impact on negative emotional state.

LIMITATIONS AND FUTURE WORK

Most of the research on video game violence has been done in the context of college student samples. This body of research has proven controversial due to the difficulty in having a control condition of non-violent games that were similar to the violent games on qualities other than violent content (Ferguson, et.al., 2015). We tried to account for this limitation with the games that were chosen and the fact that the participants didn't actually play the games but viewed game footage. This also addresses the concern that emotional feelings are influenced by competitiveness of the participants. Due to the fact that the participants didn't play the games but only viewed footage of the games, we address the potential impact of competitive on the emotional state of the participants. In addition, the sample sizes are extremely small and the margin of error could be significant.

More testing and an increased sample size will help determine if these hypotheses hold true. The study will continue to add new subjects in order to determine the validity of the hypotheses discussed in this paper. Four subjects out of thirty-four is simply not enough to examine if there is a correlation between age and the emotional states of the subjects. However, the results are promising thus far. Overall, the results indicated that there is not huge deviation from one game to another; however, some subjects have shown a very slight adverse reaction of feeling uncomfortable to the more violent games. A future direction for this study could be to add the component of actually playing each game and then gauging the emotional states. Additionally, a comparison of participants who view the short video of the game and ones who play each game would be an interesting next step.

CONCLUSION

While it is difficult to draw conclusions based on a smaller sample size, there are a few details which emerge upon examining the data collected thus far. In total, 88% of participants were either not influenced by the violent video game footage (neutral rating of 3) or it had a positive reaction to their emotional state (positive rating of 1 or 2). The remaining 12% were a bit less positive and scored "mostly negative" on the SAM-scale. However, there is a potential negative impact on the emotional states of the subjects upon viewing the violent video game footage. As seen in Figure 6, the *Mortal Kombat XL* footage resulted in the largest shifts in the SAM scale averages. On preliminary examination of the subjects' age ranges, it shows that age could potentially be a deciding factor on reactions to the violent video game footage. Younger participants' emotional states were less likely to be affected by the different levels of violence in video games whereas older participants were more likely to feel negatively towards it. We felt that this could be due to the fact that younger generations are exposed to much more violence on screens and may have formed an immunity to the violence.

Video games are one of the best technological tools that are used for both entertainment and educational purposes. In this sense, individuals may be exposed to "potentially" harmful situations while not actually engaged in the activity. A number of studies indicated that video games, whether violent or not, play an important role in influencing the behavior of individuals interacting with them. Several research findings reported that video games do not trigger significant negative behavior. On the other hand, a number of studies indicated that there is a clear and unequivocal link

between video games and violent behavior. In fact, the American Psychological Association confirms a link between playing violent video games and aggression (American Psychological Association, 2015). This paper focused on verifying the validity of these studies. In other words, the study tries to verify if there is a significant relationship between watching simulated violence in the form of video games and real word violence. The methodology created involved human subjects being asked to watch short clips of various games and gauging their emotional state before and after incorporating the Self-Assessment Manikin (SAM) 5-point Likert scale which ranges from negative to positive emotional state. The games were chosen based on several criteria suggested by the Entertainment Software Rating Board (ESRB), which governs the content ratings in a game and assigns an age requirement for purchase and use.

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QUARTERLY REVIEW OF BUSINESS DISCIPLINES

VOLUME 6 NUMBER 1 MAY 2019

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A JOURNAL OF INTERNATIONAL ACADEMY OF BUSINESS DISCIPLINES

SPONSORED BY UNIVERSITY OF NORTH FLORIDA

ISSN 2334-0169 (print)

ISSN 2329-5163 (online)