QRBD

QUARTERLY REVIEW OF BUSINESS DISCIPLINES

August 2015

Volume 2
Number 2
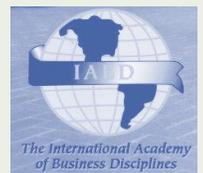
Blank inside front cover

FROM THE EDITORS

This issue of *Quarterly Review of Business Disciplines* begins with the scholarly research of Judy Rouse Van Doorn, Danielle Sims, and John Donald Van Doorn. They investigate value-based leadership and its linkages with emotional intelligence and creativity. The research of Mark A. Grimes and Robert H. Bennett III explores a new approach to God honoring leadership – Theocentric Leadership.

In our next two papers, Mahesh Vanjani, Milam Aiken, and Mina Park explore factors that influence machine translation comprehension. The research of James E. Weber, Paula S. Weber, and Margaret A. Young delves into service-learning and asks the question of whether greater exposure to service learning enhances student outcomes or neutralizes it.

Our final two papers, *What Are the Factors Affecting Price Perception – The Case of Guatemala* by John E. Spillan, Talha Harcar, and Nicholas Virzi, and *Management Cockpit as a Layer of Integration for a Holistic Performance* (Germany) by Armin Roth explore practical factors that affect business worldwide.

Margaret A. Goralski, *Quinnipiac University,* Editor-in Chief
Kaye McKinzie, *University of Central Arkansas*, Associate Editor

QRBD - QUARTERLY REVIEW OF BUSINESS DISCIPLINES

A JOURNAL OF INTERNATIONAL ACADEMY OF BUSINESS DISCIPLINES

EDITORIAL REVIEW BOARD

INTERNATIONAL ACADEMY OF BUSINESS DISCIPLINES

MISSION STATEMENT

The organization designated as the International Academy of Business Disciplines
is a worldwide, non-profit organization, established to foster and promote education
in all of the functional and support disciplines of business.

The Quarterly Review of Business Disciplines (QRBD) is listed in
Cabell's Directory of Publishing Opportunities.

QRBD - QUARTERLY REVIEW OF BUSINESS DISCIPLINES

CONTENTS

ARTICLES

This page has been intentionally left blank.

SCHOLARLY LEADERS: VALUE-BASED LEADERSHIP AND LINKAGES WITH EMOTIONAL INTELLIGENCE AND CREATIVITY TYPES

Judy Rouse Van Doorn, PhD, Troy University
jvandoorn@troy.edu

Danielle R. Sims, Troy University
dsims87734@troy.edu

John Donald Van Doorn, PhD, Troy University
jvandoorn91678@troy.edu

ABSTRACT

Identifying outstanding leaders is important in the dynamic business environment. Leadership has been studied as traits, behaviors, and path-goal based theories to the present cognitive approaches. High-potential leaders exhibit the characteristics of assertiveness, independence, and flexibility to changing environments along with social responsibility and enhanced positive psychological capital with employees. Outstanding leaders are generally optimistic and make value-based decisions through a self-reliant and directed approach to managing. Leadership can be described as quotients of intelligence (IQ) and emotions (EQ) or (EI) emotional intelligence that may lead to performance success with use of management competencies (MQ) in the formula IQ + EI = Success, plus MQ. Even with EI enhancing higher leadership, there exists a gap in the literature relating the construct to decision-based values and heightened creativity. The purpose of this research is to assess leadership knowledge and the relationships with values, emotional intelligence, and creativity. Participants include 797 global university students with an average age of 35 years who reported having full-time work employment and managerial experiences. Research evidence suggests that high leader knowledge was significantly related to EI and the values of self-direction, security, power, and stimulation. Leaders were found to have significant scholarly, mechanical, and scientific creativity. High EI individuals evidenced self-direction, achievement, conformity, universalism, and benevolence values. Emotionally intelligent individuals held self-concepts described through scholarly and everyday creativity. The hope is that this evidence on leadership enhances the understanding about the influence of emotional intelligence and value-based decision-making found in outstanding, creative leadership.

Keywords: Leadership, Values, Emotional Intelligence, Creativity

INTRODUCTION

Identifying and training high potential individuals into outstanding leaders of organizations is of great importance in the dynamic business environment. Leadership has been studied as traits, behaviors, and path-goal based theories to the present cognitive approaches (Friedrich, 2010). Outstanding leadership styles include transformational, transactional, charismatic, and pragmatic leadership (Mumford, 2006; Mumford & Van Doorn, 2001). Dries and Peperman (2007) found

that high-potential leaders exhibit the characteristics of assertiveness, independence, and flexibility to changing environments along with social responsibility and enhanced positive psychological capital with employees (Luthans & Youssef, 2004). Also, high-potential leaders are generally optimistic and make value-based decisions through a self-reliant and directed approach to managing. Developing outstanding leaders in business and institutions is critical to the success of a growing economy. While values, traits, personality styles, and behaviors have been researched in depth, growing research evidence focuses on leader competencies and the factor of emotional intelligence (EI) that may play a larger role in leadership success, performance, and advancement within organizations. Even though EI has been found to enhance higher leadership, there exists a gap in the literature relating the construct to decision-based values and heightened creativity, an intelligence factor. Therefore, the purpose of this study is to assess leadership (Arvey, Zhang, Avolio, & Krueger, 2007; Mumford, 2010) and relationships with emotional intelligence (Davies, Lane, Devonport, & Scott, 2010), values (Bonnes, Passafaro, & Carrus, 2011; Inglehart, Basanez, & Moreno, 1998; Park, Peterson, & Seligman, 2006; Schwartz, 1992), and creativity (Kaufman, 2012; Litman & Silvia, 2006). The predictors of emotional intelligence, values, and creativity will be discussed in the following literature review as potential influencers to gaining top leadership performance.

LITERATURE REVIEW

Emotional Intelligence

Goleman's (1996) popular book titled *Emotional Intelligence: Why it can matter more than IQ* and Gardner's (1983) multiple intelligences research that includes an interpersonal component, both contributed to the heightened interest in emotional intelligence as a research construct for leadership. Initially, an EI adaptive abilities model was formulated based on appraisal and emotion expression, emotional regulation, emotional utilization for problem-solving, and understanding emotion (Mayer & Salovey, 1997) and an EI personal and social factors inventory (Bar-On, 1997, 2000). Research scholarship by Dulewicz and Higgs (2003) furthered the connection between emotional intelligence as an influencing factor upon managerial leadership. These authors posited a formula based on research evidence outlined as the quotients of intelligence (IQ), emotions (EQ), and management competencies (MQ) into the formula, IQ + EQ or EI (Emotional Intelligence) = Success, plus MQ, respectively. The quotient of management competencies (MQ) is composed of being able to supervise, have initiative and a tenacious, good sense of business in order to advance in management. Dulewicz & Higgs (2003) research findings indicate that outstanding managers performed at IQ competency factors at 27%, including the factors of being able to make judgments, do analyses, plan accordingly, organize, be creative, strategize, and take appropriate risks; whereas, their MQ competency factors were 16% and the emotional quotient (EQ) accounted for a strong 36% of the advancement potential of manager leaders. These authors further developed the Emotional Intelligence Questionnaire (EIQ) to measure seven EI variables including self-awareness, emotional resilience, motivation, interpersonal sensitivity, influence, intuitiveness, and conscientiousness or integrity.

EI research has evolved into a measurable construct with applied social and emotional educational programs (Matthews, Zeidner, & Roberts, 2012; Mayer, Caruso, & Salovey, 2000; Petrides, Furnham, & Mavroveli, 2007). U. S. Navy senior leader research evidence found that emotional

intelligence is positively related to transformational and transactional leadership styles while a negative relationship was found for passive/avoidant leadership style (Leigh, 2013). From a subordinate perspective, an academic organization's leader use of negative emotions may influence their well-being negatively if the leader aligns with demanding, intellectual stimulation (IS) behaviors or a leader that uses regulatory management by exception (MBE) behaviors that seem to challenge 'academic freedom'; whereas, positive subordinate well-being was found when the leader exhibited individual consideration (IC) behaviors (Zineldin & Hytter, 2012). The factors of emotional intelligence, creativity as a form of intelligence, and values as individual stable components will be assessed for relationships to outstanding leadership.

Values and Creativity

As mentioned earlier, creativity is subsumed within the intelligence quotient (IQ) defined by Dulewicz and Higgs (2003). Researchers have studied the importance of problem-solving for creative and outstanding leadership ability (Mumford, Connelly, & Gaddis, 2003). Workplace creativity is a valued component of productivity and research and development. Park, Peterson, and Seligman (2006) found that the curiosity variable in their Values in Action (VIA) survey ranked in the top five values for 49 out of 54 nations surveyed in their cross-cultural research study. Furthermore, curiosity as a value is considered a personality trait that can be defined by an interest or deprivation model (Litman & Silvia, 2006). Along with the curiosity value is the value of creativity that is considered a positive VIA value for learning. Both curiosity and creativity, considered work-related values, were categorized with the top values of kindness, fairness, honesty, gratitude, judgment, love, and humor in the VIA study. As a leader the use of creativity, especially for problem-solving and decision-making, is an important value to have and apply in the work environment. Creativity has been defined as a product and/or performance that is novel, original, useful or appropriate with an individual's ability to use the ideation of divergent thinking skills (Guilford, 1950, 1967; Kaufman, 2009; Mumford, 2003; Runco, 2004; Sternberg, Grigorenko, & Singer, 2004). Many define creativity with what comes "first to mind" like the drawing skills like an artist. However, creativity is composed of many abilities and skills. In order to clarify creativity and the different types Kaufman (2012) created a scale that measures five creativity types including scholarly, performance, artistic, mechanical/scientific types, and everyday "self" creativity. Use of creativity abilities in the workplace may enhance job performance, worker well-being, and job satisfaction (Wright, Cropanzano, & Bonnett, 2007). In this study we will clarify these five types of creativity along with total creativity and their relationships with top leadership.

The third factor assessed includes values and relationships to top leadership with the influencing variables of emotional intelligence and creativity. Individual values have been studied to assist with vocational career selection (Super & Sverko, 1995) and as defining cross-cultural categories such as masculine/feminine, power distance relationships, benevolence, and traditional value types (Hofstede, 1980; Schwartz & Smith, 1997). Ingelhart, Basanez, and Moreno (1998) conducted research across 43 different countries on values related to politics, religion, family, work, leisure, and social values. Though most values research has concentrated on assessing individual belief systems, leadership connections to values have been researched as value-centered leadership (Bass, 1985), as different leadership styles to followers (Jung & Avolio, 1999), temperament and cognitive relationships with executive ability (Mumford, Zaccaro, Harding, Fleishman, & Reiter-

Palmon, 1993) and research relationships with ethical value-based performance to outstanding leadership (Van Doorn & Mumford, 2001). While these research studies related value factors to types of leadership, this study focuses on assessing the combined relationships of emotional intelligence, values, and creativity with the criterion of outstanding leadership.

Hypotheses

First, the full scale of the Brief Emotional Intelligence measure was incorporated into this study and predictions were hypothesized for higher leadership relationships. The emotional intelligence EI measure consists of 10 questions (Davies, Lane, Devonport, & Scott, 2010). This EI measure assesses individual ability to appraise and regulate their own and others' emotions. Appraisal of own emotions is being able to recognize and understand why personal emotions change. Regulation of own emotions includes emotional control and seeking activities that increase happiness. On the other hand, being able to appraise others' emotions includes having perception and heightened sensation and perception abilities to feel tones of voice and related facial experiences. Furthermore, regulation of others' emotions involves the ability to arrange enjoyable events for others and make them feel better. Also, the utilization of emotions variables are rated on whether one is able to keep good emotions when faced with obstacles and when in positive moods, create ideas.

We predict that individuals with top leadership ability will be able to appraise their own and others emotions on a higher level. These predictions include factor one (appraisal of own emotions) hypothesized at a strong level for leadership, factor two (appraisal of others' emotions) at high levels, factor three (regulation of own emotions) at medium to strong levels, factor four (regulation of others' emotions) at medium levels, and factor five (utilization of emotions) at strong levels. Due to leadership positions being subject to many crises and problem-solving situations and tasks, our predictions suggest that higher leadership ability is related to medium levels of regulating others' emotions. Overall, we predict that outstanding leaders will be able to utilize all emotions to stay positive during difficult times and continue creative ideation in order to do their jobs at high levels. See Table 1 for the hypothesized predictions for Emotional Intelligence (EI) relationships to higher leadership.

Table 1. Predictions for Leadership Relationships and Brief Emotional Intelligence Scale

Variables	Low	Medium	High
Factor One A: Appraise own emotions			+
Know why my emotions change			
Factor One B: Appraise own emotions			+
Recognize my emotions			
Factor Two A: Appraise others' emotions			+
Can tell how people feel by voice tone			
Factor Two B: Appraise others' emotions			+
By looking at facial expressions, recognize emotions people experience			
Factor Three A: Regulate own emotions		+	
Seek activities that make me happy			
Factor Three B: Regulate own emotions			+

	Medium	High
Have control over my emotions		
Factor Four A: Regulate others' emotions	+	
Arrange events others enjoy		
Factor Four B: Regulate others' emotions	+	
Help other people feel better when they are down		
Factor Five A: Utilization of emotions		+
When I am in positive mood, I come up with new ideas.		
Factor Five B: Utilization of emotions		+
Use good moods to help myself keep trying in face of obstacles.		
Total predictions	3 Medium	7 High

The hypotheses are outlined in the following tables based on whether a value was predicted to have influence on a scale of low, medium, to high importance for top leadership. Specifically, we hypothesized that leaders would have an intermediate concern for values labeled as Biospheric and defined as protecting the environment. High levels were predicted for openness to change and conservatism values based on each variable with a total of three high importance prediction scores. See Table 1 for the total prediction scores for the Brief Values Scale to leadership. Similar to our hypothesis on the Biospheric values, we hypothesized that leaders would have an intermediate level of values labeled as Ecocentrism described as caring about nature and would have low to medium apathy levels about conservation of natural resources. Additionally, we hypothesized that leaders would be medium to strong on values labeled as Anthropocentrism that describe decisions on the uses of natural resources in order to increase living standards for higher quality of life. Furthermore, we hypothesized that quality green values and leadership would have mixed relationships with four low, three medium, and three strong value predictions. See the following Table 2 for hypothesized predictions assessed on the Brief Values Scale related to top leadership.

The hypotheses for the creativity and leader relationships are predicted to depend on the profession or institution that the leader is leading and the educational background that has fostered their knowledge. We predict managerial leadership to be higher on everyday self-creativity aligning with pragmatic leadership style and scholarly creativity due to the writing and proposal development abilities needed at top leadership positions. Whereas, we predict that artistic and performance creativity is less related to top leadership.

Table 2. Brief Values Scale with predictions for Top Leadership

A. Biospheric Values - Predictions for Top Leadership

Variables	Low	Medium	High
1. Protect environment		+	
2. Respect earth		+	
3. Unity with nature		+	
Total predictions		3 Medium	

B. Openness to Change - Predictions for Top Leadership

Variables	Low	Medium	High
1. A varied life			+
2. An exciting life			+
3. Curiosity			+

Total predictions			3 High

C. Conservative Values – Predictions for Top Leadership

Variables	Low	Medium	High
1. Honoring Parents			+
2. Family Security			+
3. World at Peace			+
Total predictions			3 High

D. Ecocentrism Values - Predictions for Top Leadership

Variables	Low	Medium	High
1. Unhappy, find comfort in nature		+	
2. Enjoy time in natural settings in nature			+
3. Stress reducer in nature		+	
4. Need time in nature to be happy	+		
5. Sad to see natural environments destroyed		+	
Total predictions	1 low	3 Medium	1 High

E. Apathy Values - Predictions for Top Leadership

Variables	Low	Medium	High
1. Too much conservation		+	
2. Depletion of natural resources not as bad		+	
3. Conservationists are pessimistic & paranoid		+	
4. Opposed to programs to preserve wilderness, reduce pollution, conserve	+		
5. Hard to get concerned about environment	+		
6. Exaggerated threats of deforestation and ozone depletion		+	
7. Don't care about environmental problems	+		
Total predictions	3 Low	4 Medium	

F. Anthropocentrism Values - Predictions for Higher Leadership

Variables	Low	Medium	High
1. Land development is Ok with high quality of life preserved			+
2. Conserve nature to ensure high std. living			+
3. Clean rivers & lakes for water sports		+	+
4. Preserve resources for high quality life			+
5. Science & Technology will solve pollution problems, overpopulation.		+	
6. Worst thing about loss of rain forest, will restrict new medicines		+	
7. Deforestation concern means not enough lumber		+	
Total predictions		4 Medium	4 High

G. Perceived Quality of neighborhood green areas

Quality Green Values - Predictions for Top Leadership

Variables	Low	Medium	High
1. Enough green spaces		+	
2. Green areas for relaxing		+	
3. If want to go to park have to go to other neighborhoods	+		
4. Green areas in good condition			+
5. Lack of parks for children to play			+
6. At least garden or park where people can meet		+	
7. Green areas too small	+		
8. Many green areas disappearing	+		
9. Green areas well-equipped			+
10. Most green areas closed to public	+		
Total predictions	4 Low	3 Medium	3 High

METHOD

This research study involved a battery of measures delivered online with the Qualtrics.com search engine to global university participants. The average age is 35 years with grade point averages at 3.31. The online study yielded 797 total participants with 32% male and 68% females responding. Participants reported leader/managerial work experiences and many indicated military service years. The diversity of participants includes 506 Caucasians, 211 African Americans, 26 Hispanic, 11 Asians, 6 Native Americans, and others not identified. The educational levels of participants included 222 with 2-year college degrees, 214 with 4-year college degrees, 68 with Masters degrees, 3 with Doctoral degrees, and 2 with professional degrees (JD, MD). Additionally, participants were asked to report their work experiences and the results indicated employment ranges from 9.4% as a company president to 44.9% managers and 56% serving as team leaders. This research study includes global University participants who are mostly non-traditional students that work full-time in addition to completing educational degrees. Of the original 797 participants of this online study many individuals indicated that they held military service work during their career. Therefore, participants were able to assay the online research questions and, thereby, contribute to this leadership study due to their extraordinary work experiences.

A battery of measures were used for this study including several measures to assess participant leader knowledge (Arvey, Zhang, Avolio, & Krueger, 2007; Mumford, Zaccaro, Harding, Fleishman, & Reiter-Palmon, 1991) and the Brief Emotional Intelligence (EI) scale (Davies, Lane, Devonport, & Scott, 2010). Also, two values measures were included in this study including Schwartz's (1992) cross-cultural values measure and an updated Brief Values Inventory by Bonnes, Passafaro, and Carrus (2011) to assist with clarification of measured values through covariation. Furthermore, this study includes the Kaufman Domains of Creativity Scale (2012) to assess creativity types including everyday creativity, scholarly creativity, performance creativity, mechanical/scientific creativity, and artistic creativity. Reliability Cronbach alphas for the measures were calculated and the results include the 20-item Leader Knowledge scale at .96, and reliabilities for the 10-item Emotional Intelligence scale at .84. The reliabilities for the Kaufman

Domains of Creativity Scale types on this study include Factor one subsuming 11-items of Self/Everyday creativity at .84, Factor two subsuming 11-items of Scholarly creativity at .92, Factor three subsuming 10-items of Performance creativity at .93, Factor four subsuming 9-items of mechanical/scientific creativity at .91, and Factor five subsuming 9-items of Artistic creativity at .90.

The main criterion measure for this study is leader knowledge. To assess high leadership, we used the leader knowledge survey that is a 20-question measure with items asking about reviewing ongoing projects, evaluating job candidates, determining equipment quality specifications, preparing timetables for subordinates to submit reports, designing standard operating procedure, training teams, planning and monitoring budgetary expenses, and even encouraging subordinates to solve problems and increase creativity (Arvey, Zhang, Avolio, & Krueger, 2007). Participants were rated on these job tasks and duties with a 7-point Likert scale from 0 - have never done, 2 - sometimes do, 4 - often do, to 6 - have always done these job tasks. Therefore, a higher score on this leader knowledge measure gives a good representation of work experience and behaviors as a leader. Further measures of leadership in this study include self-reports asking what level and type of professional manager and/or military service was obtained during the participant's professional career.

Values have been found to influence decision-making ability and define different styles of leadership. Therefore, in this study we assessed participants on two values measures. The first Values measure created by Schwartz (1992) may be considered a classic values measure due to its many citations on pivotal research endeavors in cross-cultural values research. To enhance clarity of Values that may be used in leader decision-making, a covariate assessment was conducted with the Brief Inventory of Values (Bonnes, Passafaro, & Carrus, 2011) being correlated with the Schwartz (1992) Basic Value Types Scale including Universalism, Power, Achievement, Hedonism, Stimulation, Self-direction, Benevolence, Tradition, Conformity, and Security. This covariate comparison is to clarify the Value variables comprising these measure scales assessed on Leadership and Emotional Intelligence. Specifically, the Brief Inventory of Values includes the following values labeled A. Biospheric Values (protecting the environment, respecting the earth, unity in nature); B. Openness to Change (a varied life, an exciting life, curiosity); C. Conservative Values (honoring parents, family security, world at peace); D. Ecocentrism (nature centered & makes self happy); E. Apathy (anti-establishment & maybe less leadership); F. Anthropocentrism (human centered where nature exists to take advantage of); and G. Green - Perceived Quality of neighborhood green areas (parks for children to play & people to meet). The Brief Inventory of Values includes new value labels and cross-references with some variables of the Schwartz Values scale (1992). Biospheric values cross-reference with Universalism descriptors "protect the environment", "respect the earth", and "unity with nature." Openness to change includes curiosity and subsumes stimulation variable "a varied life" and "an exciting life." The conservative variable is composed conformity – "honoring parents," security – "family security," and universalism – "world at peace." It is of note that Schwartz (1992) Universalism variable is more widely defined and includes further descriptors of broadminded, wisdom, social justice, equality, a world at peace, and a world of beauty. Therefore, the Universalism variable may be a stronger world-view indicator while the Biospheric values describes specific environmental concerns. The research design includes correlational and regression analyses.

RESEARCH FINDINGS

Correlational and regression analyses were conducted in this study. The research analyses included the initial correlational analysis of the covariate values measures. In Table 3 between the covariate correlations, meaningful positive relationships were found for conformity related to Conservative (r =.82), achievement related to Openness to change (r = .55), Ecocentrism related to self-direction (r = .27) and Apathy negatively related to Benevolence (r = - .23) and to Universalism (r = - .41) at the p < .001 level. With these meaningful relationships our evidence indicates that both scales are appropriate values measures. Additional research findings were found for the leader knowledge dependent variable when correlated to both the Schwartz (1992) Basic Values and the Brief Values Inventory. See Table 3 for the correlations of leader knowledge to the Brief Values Inventory. Meaningful relationships were evidenced for higher leadership and the values of Openness to change at (r = .29), Biospheric values at (r =.18), Anthropocentrism (r = .15), and to Quality Green at (r = .15) at the p < .001 level. These results suggest that top leadership needs to be very flexible and open in their ability to adapt to change in the workplace in order to stay competitive. Our prediction was confirmed with the Openness to change value evidence related to top leadership. Furthermore, the construct of Curiosity is embedded in the Openness to Change variable and is supported by the values in action VIA research (Park, Peterson, & Seligman, 2006). A significant, yet low correlational finding is the leadership relationship to Anthropocentrism at (r = .15) and Apathy at (r = .11) at the p < .001 level; whereas, there was no relationship between Leadership knowledge and Ecocentrism values. This finding suggests that leaders may make decisions based on economic development, quality of life, and the products that can be created from natural resources over decisions and concerns for preserving the wilderness and natural environments. This finding may suggest that there is the potential for managers to make short-term decisions over long-term decisions on environmental matters.

In comparison in Table 4, the Emotional Intelligence construct to the Brief Values Inventory evidenced very significant findings. Meaningful relationships were found for EI and the Conservative value (r = .38), Openness to Change (r = .32), and Biospheric values (r = .28) at the p < .001 level. Where Leadership knowledge was not related to Ecocentrism values, high EI was significantly related at (r = .26). Also, high Emotional Intelligence was negatively related to Apathy at (r = - .13) at the p < .001 level. This juxtaposition between our Leadership knowledge criterion and the Emotional Intelligence findings suggests top leadership may weigh environmental decision-making differently. On the other hand, leaders with more EI may make significantly different decisions concerning the natural environment and their organizations. It may suggest that leaders may favor economic development over conservation. The most significant EI relationship to the Brief Inventory of Values was to the Conservative value at (r = .38) at the p < .001 level with descriptors of honoring parents, family security, and World at peace while Leadership knowledge was correlated at (r = .12). This relationship suggests that family values are highly regarded for the emotionally intelligent individual and top leaders may have less time to spend on family values due to the workload pressures. See Table 4 for the entire Leadership and Brief Inventory of Values correlations.

Table 3. Covariate Correlations of Basic Value Type Scale & Brief Inventory of Values

VALUES	Biospheric	Openness to Change	Conservative	Ecocentrism	Apathy	Anthropo-centrism	Quality Green
Achievement	.33***	.55***	.51***	.12**	-.06	.20***	.08*
Benevolence	.51***	.43***	.77***	.24***	-.23***	.03	.03
Conformity	.44***	.38***	.82***	.12***	-.10**	.11**	.04
Hedonism	.40***	.61***	.54***	.15***	-.16***	.11**	.08*
Power	.22***	.39***	.29***	-.06	.17***	.30***	.14***
Self-Direction	.52***	.79***	.56***	.27***	-.21***	.08*	.02
Security	.54***	.47***	.71***	.12**	-.13***	.17***	.02
Stimulation	.40***	.92***	.33***	.15***	-.04	.20***	.04
Tradition	.49***	.38***	.69***	.17***	-.09*	.14***	.07*
Universalism	.87***	.55***	.77***	.35***	-.41***	.03	-.07

$p < .05$ *$p < .01$** *$p < .001$***

Table 4. Leadership Knowledge & Brief Inventory of Values Relationships

	Leadership Knowledge & Values		Emotional Intelligence & Values	
	N	r	N	r
Biospheric	633	.18***	711	.28***
Open to Change	637	.29***	715	.32***
Conservative	632	.12***	710	.38***
Ecocentrism	631	.05	720	.26***
Apathy	627	.11**	714	-.13***
Anthropocentrism	630	.15***	711	.17***
Quality Green	626	.15***	700	.10**

$p < .05$ *$p < .01$** *$p < .001$***

Further correlational analyses were conducted on the second values measure created by Schwartz (1992). Correlational comparisons were conducted for Leader Knowledge, Emotional Intelligence, and total Creativity and meaningful relationships were evidenced. A very significant relationship was found for Emotional Intelligence and the Benevolence value at the ($r = .45$) and Creativity at ($r = .16$) at the $p < .001$ level. On the other hand, Leadership was not very significant to Benevolence at ($r = .08$) at the $p < .05$ level. The descriptors for Benevolence include helpful, honest, forgiving, loyal, and responsible. This relationship suggests that ethical decision-making may be compromised at the leader position. The most significant relationships for the Schwartz Basic Values include Leader Knowledge to Stimulation ($r = .29$), Power ($r = .27$), Security ($r = .23$), and Self-Direction ($r = .22$). In addition, significant and meaningful relationships were found between Emotional Intelligence to Benevolence ($r = .45$), Self-Direction ($r = .44$), Conformity ($r = .41$), and Achievement ($r = .39$). Also, evidence revealed Creativity being significantly related to Stimulation ($r = .31$), Self-Direction ($r = .30$), and Universalism ($r = .30$) with all variables at the $p < .001$ level. Further correlations evidenced that high creative individuals are also high on EI at ($r = .34$); whereas, Leaders held significant, yet moderate relationships to EI at ($r = .16$) at the $p < .001$.

It may be important for individuals in line for leadership positions to be trained in emotional intelligence skills through developing better awareness of their own and others' emotions through better cognitive self-regulation and control techniques. Additionally, being able to understand one's own emotional physiology as well as being aware of others' emotions may enhance

managers in emotional regulation and stress reduction coping skills for better well being. See the following Table 5 for the relational comparisons of Leader Knowledge to Values, Emotional Intelligence, and Creativity.

Table 5. Comparison of Leader Knowledge to Values, EI, and Creativity

	Leader Knowledge (LK)		Emotional Intelligence (EI)		Total Creativity	
	N	LK r	N	EI r		
Achievement	638	.18***	719	.39***	640	.19***
Benevolence	634	.08*	711	.45***	635	.16***
Conformity	631	.11**	707	.41***	635	.22***
Hedonism	638	.14**	717	.38***	640	.18***
Power	640	.27***	721	.19***	641	.23***
Self-Direction	626	.22***	704	.44***	627	.30***
Security	636	.23***	713	.37***	639	.22***
Stimulation	638	.29***	717	.26***	640	.31***
Tradition	629	.15***	705	.35***	633	.23***
Universalism	627	.18***	703	.36***	629	.30***
Emotional Intelligence	613	.16***		1	621	.34***

$p < .05*$ $p < .01**$ $p < .001***$

As mentioned earlier, creativity as a construct can be difficult to define and that many people want to define it mostly as artistic creativity. In this study we used a 50-question measure created by Kaufman (2012) with five separate creativity domain types described as scholarly, performance, artistic, mechanical scientific, and self for everyday creativity. In the following Table 6, several meaningful relationships were found for Leader Knowledge and EI on total creativity scores with ($r = .35$) and ($r = .34$) at the p < .001 level, respectively. The most significant relationship for Leadership included scholarly creativity at ($r = .37$) and for Emotional Intelligence for everyday "self" creativity with ($r = .57$) at the $p < .001$ level. This evidence suggests that the voice of written scholarship is highly prized for effective leadership. On the other hand, everyday creativity for the individual may help to self regulate emotions for developing stronger overall Emotional intelligence EI for effective, consistent leadership. See the following Table 6 for leadership and emotional intelligence correlated with the five domains of creativity types.

Table 6. Leadership Knowledge & Emotional Intelligence with Creativity Types

Leader Knowledge	N	r	EI N	r
Scholarly Creativity	625	.37***	625	.37***
Performance Creativity	619	.14***	619	.14***
Artistic Creativity	627	.20***	627	.20***
Mechanical Scientific Creativity	625	.31***	692	.07
Self Creativity (Everyday)	626	.34***	691	.57***
Creativity Overall	564	.35***	621	.34***

$p < .05*$ $p < .01**$ $p < .001***$

An overview of the findings includes that top leader knowledge was significantly related to EI and the values of self-direction, security, power, and stimulation. Leaders were found to have

significant scholarly, mechanical, and scientific creativity. Additionally, high EI individuals evidenced self-direction, achievement, conformity, universalism, and benevolence values along with their self-concepts described through scholarly and everyday creativity. Research support and implications include that everyday self-creativity and high emotional intelligence may be supported by the Pragmatic Leadership style composed of day-to-day managerial skills and an ability to have EI stability (Mumford & Van Doorn, 2001). Lower benevolence values were found to be related to top leader knowledge at the $r = .107$ at $p < .01$; therefore, ethical training may need to be regularly offered in the workplace. Biospheric value relationships were significant, yet low in correlation to individuals with high leadership suggesting that decisions on environmental issues may not be considered thoroughly. Short-term decision-making may result versus long-term decision-making processes that align with sustainability concerns. Opportunity costs to organizations may include less environmentally friendly initiatives and lower employee satisfaction due to managers' use of short-term decision- making that may override or thwart important long-term strategies to support organizational vision. Additionally, managerial individual differences exist like the popular research evidence on Type A and Type B managerial personality types (Friedman & Rosenman, 1959). Type A individuals may be readily promoted due to their tendency to be more rigid in their organizational skills and management of employees. On the other hand, Type A managers are identified by their impatience and quick tempers that may suggest they are less emotionally intelligent managers and may need EI training for leadership enhancement as well as positive psychological capital within the workforce. Whereas, type B personality types may be more emotionally intelligent, yet more often passed over for promotional advancement. The implications for EI training could be important for these personality types.

Regression analyses across the two values inventories reveal that Power, Stimulation, and Security held the most significance for top leadership. Among the Brief Inventory of values, the most significant predictors include Biospheric values, Openness to Change, Apathy, and Quality Green for high leader knowledge. Additionally, the most significant EI predictor of leadership is being able to regulate your own emotions. The other emotion factors were not significant. EI training could include exercises that train empathetic regulation of others' emotions and being able to utilize all personal emotions for coping strategies. Further regression analyses upon the creativity factors revealed the most significant predictors of leadership as everyday "self" creativity, scholarly, performance, and mechanic scientific creativity. Though artistic creativity was not significant, it may be a key style of creativity that needs to be taught in order to give leaders more detail perception skills. The regression analysis on the five EI factors revealed that only the regulation of one's own emotions (seeking activities that make one happy and having control over own emotions) held significance at $\beta = .14$ at $p < .01$ as a predictor of leadership. See Table 7, 8, and 9 for regression analyses.

Table 7. Value Predictors of Leadership

Schwartz Values	β
Power	.16**
Achievement	.001
Hedonism	-.09
Stimulation	.21***
Self-Direction	.12
Universalism	.02

Benevolence	-.10
Tradition	.01
Conformity	-.07
Security	.16**
R	.39
R^2	.15
F	9.87***
Adjusted R^2	.14

$p < .05^*$ $p < .01^{**}$ $p < .001^{***}$

Table 8. Regression Analysis of Brief Values Inventory to Leader Knowledge.

Brief Inventory of Values	β
Biospheric	.15**
Openness to Change	.25***
Conservative	-.02
Ecocentrism	.01
Apathy	.17***
Anthropocentrism	.05
Quality Green	.13**
R	.38
R^2	.15
F	13.57***
Adjusted R^2	.13

$p < .05^*$ $p < .01^{**}$ $p < .001^{***}$

Table 9. Creativity styles and Leader Knowledge regression.

Creativity Styles	β
Self Creativity	.20***
Scholarly Creativity	.28***
Performance Creativity	-.21***
Artistic Creativity	.01
Mechanical/Scientific Creativity	.26***
R	.48
R^2	.23
F	33.06***
Adjusted R^2	.22

$p < .05^*$ $p < .01^{**}$ $p < .001^{***}$

DISCUSSION AND CONCLUSIONS

Leadership is multifaceted and this study evidenced many significant relationships between leader knowledge and values, emotional intelligence EI, and creativity types. Many meaningful relationships were evidenced in the correlational and regression analyses. This research evidence suggests that high leader knowledge was significantly related to Emotional Intelligence (EI) and the values of self-direction, security, power, and stimulation. Leaders were found to have significant scholarly, mechanical, and scientific creativity. Additionally, high EI individuals

evidenced self-direction, achievement, conformity, universalism, and benevolence values along with self-concepts described through scholarly and everyday creativity. Many of our hypotheses were supported suggesting that leaders are concerned significantly about biospheric values at medium levels and embrace the open to change values at high levels. Additionally, our hypothesis for conservative values was found significant at a lower level of concern. Although the Ecocentrism value of nature-centeredness was found not to be related to leadership, both the Anthropocentrism and Apathy values did evidence significance at medium levels where nature is described as existing to be used and that there is too much conservation, respectively. However, these findings suggest that leaders may be more anthropocentrically focused on what kinds of benefits that resources may bring to their company or organization and may be more apathetic over global environmental concerns.

On the other hand, Emotional Intelligence is significantly related at high levels to the Brief Values Scale including Biospheric values, Openness to change, Conservative, and Ecocentrism values while moderately related to Anthropocentrism and quality green values. Moreover, EI was negatively related to the Apathy value that suggests high EI leaders hold a stronger concern for environmental issues. Regulating one's own emotions was found to be the only EI factor predictive of top leadership in this study, although it may suggest individuals who cultivate a mastery of the other EI factors including appraisal of own and others' emotions, regulation of others' and utilization of emotions may become extraordinary competent leaders. Therefore, diplomacy skills and emotional intelligence training on self-regulation and control could enhance EI in the work environment for daily task and delegation duties. Political theory on diplomacy spearheaded by Morgenthau (1948) pioneered practical rules for effective diplomacy and statecraft. Diplomacy includes items like cultivating empathy with opponents, never backing opponents into a corner without respecting their retreat or potential for loss of face, and diplomatic tenets such as imperfect peace is more cooperative and better than victory in winning at all costs. These diplomatic rules may be applied for leaders and managers in certain contextual situations of organizations such as asymmetrical power relationships with subordinates and other situations with competitive companies. For example, in a scenario where energy executives of large corporations may face opposition from environmentalists, they could cultivate empathy and listening skills with these opponents for enhanced participative negotiations and better decision-making.

The creativity type predictors of top leadership include positive significance for scholarly, everyday self-creativity, and mechanical/scientific creativity, while performance creativity was negatively predictive of leadership. This evidence suggests that effective leaders may be better able to communicate through daily creative problem-solving and their leader vision through their scholarly voice and scientific production. On the other hand, the negative relationship for performance may be explained by the need for authentic leadership. This relationship suggests that most performers are followers of scripts; thereby, the directors and playwrights would be considered leaders typifying scholarship creativity. Even with this negative performance finding, it may suggest that leaders may need more training in the theatre arts to hone their voice through presentation skills.

Leaders navigate organizational structures with personal, learned communication skills and may not have had the opportunity to train or enhance their self-regulations skills as they progress into advanced leader positions and responsibilities. Noteworthy leadership styles defined by

cardiologists, Friedman and Rosenman (1959), as Type A and Type B managerial personality theory may play into skills associated with Emotional Intelligence (Eysenck, 1990). Type A personality individuals as leaders may be inflexibly organized "workaholics" who tend to be impatient and anger more readily which suggests that they may be less emotionally intelligent compared to Type B leaders, who are normally mild-mannered, reflective, and readily enjoy creativity. Individuals in leadership positions for only short-term durations may be due to having less EI training that hampers employee communication and morale. On the other hand, the leadership literature describes charismatic leaders as rhetorically gifted in their positive approaches and as being emotionally charged in their ability to speak to the passions of the audience and followers and may be best suited as leaders in times of crises. Whereas leaders who display consistent pragmatic and transformational styles of leadership, operating on day-to-day tasks with low emotion and have the ability to delegate and to promote leader change agents may be more efficient and stable leaders for longer managerial durations (Mumford & Van Doorn, 2001). Further support is found in Bedell-Avers, Hunter, and Mumford's (2008) research on comparative leader styles of pragmatism, ideological, and charismatic leadership evidencing differences on problem-solving abilities where pragmatism is most often found over other leader styles.

While we evidenced significant findings in this study, the limitations of this study must be considered when generalizing to the larger leader and managerial population. The leadership knowledge questionnaire was task-oriented and focused on daily duties including reviewing progress on ongoing projects, evaluating job candidates, training teams, identifying planning needs, and monitoring budgets and operations. Many leadership studies focus on scenario-based decision-making or in-basket exercises to assess outstanding leadership while this study focused on job specific duties. Therefore, caution should be used in generalizing the findings to all leadership styles. However, even with these limitations, we did evidence meaningful findings and were able to compare leadership knowledge and EI across significant value variable relationships. Also, the participants who volunteered their time to complete this study evidenced many years of work experience with the average age reported at 35 years and many reported serving in managerial leader positions.

Furthermore, this study's leader knowledge measure may identify more managerial behaviors that are specified in Kanungo's (1998) table that distinguishes the difference between "managership" and leadership. He defines managers as individuals who use more supervisory control and give transactional rewards within the boundaries of established organizational cultures. Maintaining employee behaviors through the status quo and hierarchical lines of authority typifies the author's definition of first-line supervisors. On the other hand, Kanungo (1998) defines leadership as individuals who have visionary purpose through their focus on future-oriented organizational goals, positive change, and transformational follower influence. Leaders have the ability to empower followers as organizational change agents. In this study, the leader knowledge measure tasks may not apply to all types of leadership styles and may be more aligned with transactional and pragmatic leaders versus transformational or charismatic leader types. Also, the significant emotional intelligence findings may indicate further distinctions between individuals who have more leadership ability along with more emotional intelligence evidence compared to individuals displaying more supervisory behaviors.

Some concrete opportunity costs may result from managers who haven't honed their emotional intelligence skills. Managers who are less emotionally intelligent may make decisions that are less environmentally friendly, result in lower employee satisfaction, and make more short-term decisions that override long-term vision decisions. For example, it is a plausible hypothesis that the unrestrained pursuit of large amounts of non-renewable energy utilizing new, unconventional oil and gas techniques such as fracking may lead to large-scale water and air pollution and possible local earthquakes (Krupp, 2014, p. 15). Implications from our study suggest that EI can be used to train and build effective future leaders, similar to the visionary political leadership model (Dror, 1988). Also, managers and leaders that are recognized and rewarded for healthy work environments that are quantified by less employee turn over, higher job satisfaction, and sustained leader-employee company trust and loyalty may need further research attention. A noted finding includes the correlation between leaders and the benevolence variable that indicated a relationship at r = .11 at p < .01. On the contrary, our research evidence also found that higher EI individuals are related significantly to benevolence-related values and/or ethical leading. Though the relationship is not very strong, it is very significant and suggests that leaders may be low on ethical benevolence and be in need of EI training to combat the ethical dilemmas faced in the workplace. With this opposing benevolence comparison found between EI and leader knowledge, further research needs to be conducted to clarify different hierarchical levels of managers, supervisors, and top leaders with related values, creativity differences, and EI potentiality.

The finding that everyday self creativity is significantly related to high emotional intelligence supports the leadership style of Pragmatism where leaders methodically perform their duties day-to-day and contribute to organizational goals from a planned, systematic approach (Mumford & Van Doorn, 2001). The creativity relationships found in this study suggest that leaders need to value the importance of practicing creative endeavors for themselves and their employees in areas that include writing, scholarship, scientific research, art, and collaborative performance. Better leader decision-making ability may involve building more personal emotional intelligence and awareness of others emotions along with finding opportunities for everyday creativity and research scholarship. Emotional Intelligence can be trained earlier in school settings to assist with the cognitive, and socio-emotional components of daily living, learning, and working (Matthews, Zeider, & Roberts, 2012). Future research may need to address EI differences between managers versus leaders where assessments could tap the quantity of leadership tasks and creativity performed with the levels of emotional intelligence documented during time intervals. The hope is that this evidence on leadership enhances the understanding about the influence of emotional intelligence and value-based decision-making found in outstanding, creative leadership.

REFERENCES

Arvey, R. D., Zhang, Z., Avolio, B. J., & Krueger, R. F., (2007). Developmental and genetic determinants of leadership role occupancy among women. *Journal of Applied Psychology, 92*(3), 693-706.

Bar-On, R. (1997). Bar-On Emotional Quotient Inventory: A measure of emotional intelligence. Technical Manual. Toronto: Multi-Health Systems.

Bar-On, R. (2000). Emotional & social intelligence. In R. Bar-On & J. D. Parker (Eds.), The handbook of emotional intelligence. San Francisco: Jossey-Bass.

Bedell-Avers, K. E., Hunter, S. T., & Mumford, M. D. (2008). Conditions of problem-solving and the performance of charismatic, ideological, and pragmatic leaders: A comparative experimental study. *The Leadership Quarterly, 19,* 89–106.

Bonnes, M., Passafaro, P., & Carrus, G. (2011). The ambivalence of attitudes toward urban green areas: Between proenvironmental worldviews and daily residential experience. *Environment and Behavior, 43(2),* 207-232.

Davies, K. A., Lane, A. M., Devonport, T. J., & Scott, J. A. (2010). Validity and reliability of a Brief Emotional Intelligence Scale (BEIS-10). *Journal of Individual Differences, 31(4),* 198-208. DOI: 10.1027/1614-001/a000028.

Dries, N., & Pepermans, R. (2007). Using emotional intelligence to identify high potential: a metacompetency perspective. *Leadership & Organizational Development Journal, 28*(8), 749-770.

Dror, Y. (1988). Visionary Political Leadership: On Improving a Risky Requisite *International Political Science Review, 9*(1), 7 - 22. doi: 10.1177/019251218800900102

Dulewicz, V., & Higgs, M. (2003). Leadership at the Top: The need for emotional intelligence in organizations. *International Journal of Organizational Analysis, 11*(3), 193-210.

Eysenck, H. J. (1990). Type A Behavior and Coronary Heart Disease: The Third Stage. *Journal of Social Behavior and Personality, 5,* 25-44.

Friedman, M., & Rosenman, R. (1959). Association of specific overt behaviour pattern with blood and cardiovascular findings. *Journal of the American Medical Association (169),* 1286–1296.

Friedrich, T. L. (2010). The history of leadership research. In M. D. Mumford (Ed.), *Leadership 101.* New York: Springer Publishing Company.

Goleman, D. (2001). Emotional Intelligence: Issues in paradigm building. In C. Cherniss & D. Goleman (Eds.), *The emotionally intelligent workplace* (pp. 13-26). San Francisco, CA: Jossey-Bass.

Guilford, J. P. (1987) The 1950 Presidential Address to the American Psychological Association. In S. G. Isaksen (Ed.), *Frontiers of Creativity Research.* Buffalo, NY: Bearly Limited.

Hofstede, G. (1984). Culture's Consequences: International Differences in Work-related Values. Newbury Park, CA: SAGE Publications, Inc.

Inglehart, R., Basanez, M., & Moreno, A. (1998). Human values and beliefs: A cross-cultural sourcebook, political, religious, sexual, and economic norms in 43 societies: Findings from the 1990-1993 World Values Survey. Ann Arbor, Michigan: The University of Michigan Press.

Kanungo, R. N. (1998). Leadership In Organizations: Looking Ahead To The 21St Century. *Canadian Psychology/Psychologie Canadienne, 39*(1-2), 71-82.

Kaufman, J. C. (2012). Counting the muses: Development of the Kaufman Domains of Creativity Scale (K-DOCS). *Personality and Individual Differences, 47*(4), 294-298.

Kaufman, J. C. (2009). *Creativity 101*. New York: Springer Publishing Company.

Leigh, C. (2013). Examining the relationship between emotional intelligence and leadership styles of U. S. Navy senior enlisted leaders. Dissertation Abstracts International Section A: Humanities and Social Sciences, *74*(1-A)(E).

Litman, J., & Silvia, P. (2006). The latent structure of trait curiosity: Evidence for interest and deprivation curiosity dimensions. *Journal of Personality Assessment, 86,* 318-328.

Luthans, F., & Youssef, C. M. (2004). Human, social, and now positive psychological capital management: Investing in people for competitive advantage. *Organizational Dynamics, 33.*

Matthews, G., Zeidner, M., & Roberts, R. D. (2012). *Emotional Intelligence 101*. New York: Springer Publishing Company.

Mayer, J. D., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey & D. J. Sluyter (Eds.), *Emotional development and emotional intelligence: Educational implications* (pp. 3-34). New York, NY: Basic Books.

Mayer, J. D., Salovey, P., & Caruso, D. R. (2000). Models of emotional intelligence. In R. J. Sternberg (Eds.), *Handbook of intelligence* (pp. 396-420). New York, NY: Cambridge University Press.

Morgenthau, H. (1948). *Politics Among Nations*. New York: Knopf.

Mumford, M. D. (2010). *Leadership 101*. New York: Springer Publishing Company.

Mumford, M. D. (2006). *Pathways to outstanding leadership: A comparative analysis of charismatic, ideological, and pragmatic leaders.* Mahwah, NJ: Lawrence Erlbaum Associates.

Mumford, M. D. & Van Doorn, J. R. (2001). The leadership of pragmatism: Reconsidering Franklin in the age of charisma. *The Leadership Quarterly, 12,* 279-309.

Mumford, M. D., Zaccaro, S. J., Harding, F. D., Fleishman, E. A., & Reiter-Palmon, R. (1993). *Cognitive and temperament predictors of executive ability: Principles for developing leadership capacity.* Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Park, N., Peterson, C., & Seligman, M. (2006). Character strengths in fifty-four nations and fifty US States. *The Journal of Positive Psychology, 1,* 118-129.

Petrides, K. V., Furnham, A., & Mavroveli, S. (2007). Trait emotional intelligence: Moving forward in the field of EI. In G. Matthews, M. Zeidner, & R. D. Roberts (Eds.), *The science of emotional intelligence: Knowns and unknowns* (pp. 151-166). New York, NY: Oxford University Press.

Runco, M. (2004). Everyone has creative potential. In Sternberg, R. J., Grigorenko, E. L., & Singer, J. L. (Eds.) *Creativity: From potential to Realization.* Washington, DC: APA.

Salovey, P., Mayer, J. D., & Caruso, D. (2002). The positive psychology of emotional intelligence. In C. R. Snyder & S. J. Lopez (Eds.), *The handbook of positive psychology* (pp. 159 – 171). New York: Oxford University Press.

Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. In M. Zanna (Ed.) *Advances in experimental Social Psychology, 25,* (pp. 1-65). Orlando, FL: Academic Press.

Schwartz, S. H., & Smith, P. E. (1997). Values. In J. W. Berry, M. H. Segall, & C. Kagitcibasi (Ed), *Handbook of Cross-Cultural Psychology*, (pp. 77 – 118). Needham Heights, MA: Allyn & Bacon.

Sternberg, R. J., Grigorenko, E. L., & Singer, J. L. (Eds.) (2004). *Creativity: FromPotential to Realization.* Washington, DC: American Psychological Association.

Super, D. E., & Sverko, B. (1995). *Life Roles, Values, and Careers: International Findings of the Work Importance Study*. San Francisco, CA: Jossey-Bass Publishers.

Van Doorn, J. R., & Mumford, M. D. (2001). Modeling values: Ethical, achievement, and core corporate values as predictors of leader performance. Unpublished manuscript, Department of Psychology, University of Oklahoma, Norman, Oklahoma.

Wright, T. A., Cropanzano, R., & Bonnett, D. G. (2007). The moderating role of employee positive well being on the relation between job satisfaction and job performance. *Journal of Occupational Health Psychology, 12,* 93-104.

Zineldin, M., & Hytter, A. (2012). Leaders' negative emotions and leadership styles influencing subordinates' well-being. *The International Journal of Human Resource Management, 23*(4), 748-758.

This page has been intentionally left blank.

THEOCENTRIC LEADERSHIP:
A NEW APPROACH TO GOD-HONORING LEADERSHIP

Mark A. Grimes, Georgia Southwestern State University
mark.grimes@gsw.edu

Robert H. Bennett III, Georgia Southwestern State University
robert.bennett@gsw.edu

ABSTRACT

Leadership research has focused primarily on questions of who leaders are and/or what they do. More development is necessary regarding what motivates and guides the leader to act and what guides specific leadership behavior. This conceptual paper provides foundational thought and construct development for a powerful internal motivation to leadership. This motivation builds on the concept of servant leadership and followership, but shifts the focus to leading in order to honor God and to act universally according to His character and design. "Theocentric leadership" takes the approach that many leaders feel an obligation and desire to put God in the center of everything they do, and servant leadership is a natural outgrowth of this adherence to God's will. God-centered leaders experience a powerful obligation to serve, mentor, develop, and nurture their followers and others around them. The Bible and other religious teachings provide well-developed guidance on the practice and virtue of leadership. While this particular paper addresses Theocentric leadership from the Christian perspective, it is certainly likely that adherents to the world's other great religions (and perhaps even agnostic or atheist non-believers) are motivated similarly to service, nurturing, and development of followers. Implications for future research and practical application in modern organizations are proposed.

Keywords: Theocentric leadership, servant leadership, religion, values, God-centered

INTRODUCTION

Considerable research has been done in the field of leadership over the years attempting to define what leadership is and to understand successful examples of leadership. Many definitions, approaches, models, and theories of leadership have developed and have been helpful in refining our understanding. While these useful explanations have together formed a very successful field of inquiry, many of the past leadership studies have addressed relatively limited aspects or applications of leadership (Northouse, 2013). In a recent overview of the field, for example, Northouse (2013) reviews four approaches to leadership, three theories of leadership, and five models of leadership. His comprehensive work effectively illustrates the many approaches to leadership, but concludes that the thought process behind leadership and the influences that motivate leadership behavior from within are still being explored and understood.

While most of this very helpful and successful leadership research has focused on what leadership is and what effective leadership "looks like," there has been little written in terms of the compelling

motivations to lead and specific influences on leader behavior (Blanchard, 2007; Parris & Peachey, 2013). It has been assumed that leadership is valuable because it enhances performance and development of the individual, the group, and the organization, and psychological and economic assets and benefits no doubt accrue as a result of positive leadership (Northouse, 2013). This paper proposes that many leaders feel an obligation and desire to put God in the center of everything they do, and leadership is a natural outgrowth of this adherence to God's will. We argue that God-centered leaders experience a powerful obligation to serve, mentor, develop, and nurture their followers and others around them. We look into very genuine and persuasive internal motivations for why leadership is undertaken in the first place: to serve others and to serve, honor, and venerate God. Clearly, what internally stimulates and compels fervent and fruitful leadership can be of great value in the overall leadership discussion.

Recent surveys suggest that the majority of Americans identify themselves as "Christian," with one poll suggesting 71% (Cohn, 2015) and another 83% (Langer, 2015). The Bible and other Christian teachings are replete with appeals to serve, mentor, develop, nurture, and facilitate, and many or most of this majority are no doubt aware of these mandates. Langer's survey and others suggest that about half of these respondents are fervent, passionate, or even evangelical in their faith. It is argued that for these people who profess an understanding and devotion to the the character and will of God, spirituality, religious values, and honoring God are potentially very important and compelling motivations or "calling" to take on leadership roles and to serve others. For these people, the positive influence they can have on others is likely viewed as being a very important part of their purpose in life.

Leadership behavior from this perspective is a type of "calling" to the leader, but perhaps more importantly, it affirms and is in keeping with the will of God. In this work, we focus more on the motivations and guidance to lead from the perspective of Christianity, the religion and faith to which both authors belong and to whom teachings are most familiar. Further work will be needed to validate this construct and to explore the notion from the perspective of the world's other great religions, many of which extol the virtues of leadership, selfless giving for the benefit of others, moral goal-driven behavior, improved personal and collective outcomes, and righteous development of others. Moreover, while agnostics and atheists would not act altruistically because God compels them to do so, many of them would likely believe that these serving and nurturing behaviors are simply the right thing to do and beneficial to human relations and welfare. Certainly understanding this compelling internal motivation of leaders will be of importance to future research, leadership practice, and education.

In this paper, we will build primarily upon servant leadership, which succeeds in explaining beneficial leadership behavior from the standpoint of how followers are influenced and respond. In this work, we explore the concept of leadership not as something that we control or influence in a proactive way, but rather as a response from individuals to persuasive and inspirational spiritual and religious influences. We will summarize some of the motivational aspects of previous leadership work (such as servant leadership), review and explain how religious values have an impact on organizations and management, and offer additional explanation to the study of leadership that focuses not on outcomes or methods, but on motivations that compel individuals to lead and behave in a God-centered manner.

LEADERSHIP'S FOCUS ON OTHERS

Early theories and approaches to leadership focused almost exclusively on the effectiveness and personal success of leaders, mainly looking inward to traits, skills, and abilities that made one person a better or more natural leader than someone else. In more recent work, the focus has shifted to external situations and elements, such as followers, team behavior and circumstances, and the organization. Researchers as well as practitioners have become interested in how leaders enhance and build the organization and others, rather than strictly their personal characteristics, or effectiveness (Northouse, 2013). For example, transformational leadership looked at how the leader instills vision and ideals and transforms the culture, values, people, and commitment within the organization. Likewise, followership has focused on the leader's efforts to develop mutual trust and respect in the organization in an effort to develop active, engaged, independent, and pro-active members (Northouse.2013).

Servant leadership (Greenleaf, 1970) suggests that leaders are more effective at motivating their followers when they base their actions on the needs and growth of those followers. Leaders are compelled to direct their energies away from personal interests and goals and toward the interests and goals of their followers. The initial motivation of leaders is the success and development of others, even if this conflicts with their own personal short-term success, because it often leads to personal and organizational success for the leaders in the long term. These leaders recognize that their success and the success of the overall organization will likely follow when the success of followers is ensured (Stone, Russell, & Patterson, 2004).

Blanchard (2007) discusses the impact that a servant leader can have on staff morale. He describes the basic appreciation and enthusiasm of those who have a leader who listens to them, understands them, and treats them with respect. But he also mentions the likely discouragement and demoralization of those who have a leader who "uses" them and refuses to include them in the daily processes. He notes the change in demeanor that often occurs, both negatively and positively, when leadership shifts from one who is an effective servant leader to one who is not, and vice-versa.

Liden, Wayne, Liao, and Meuser (2013) suggest that while servant leadership is a highly effective form of leadership and the altruistic and developmental behaviors have merit, it is a very difficult undertaking for many as the natural instinct and human nature for many leaders is personal success, self-interest, and self-advancement. The servant leadership literature implies that some managers will have a much easier time embracing and living out this outward-focused leadership perspective than will others (Peterson, Galvin, & Lange, 2012). Russell (2001) indicates that the reason is rooted in the personal values of the individual manager or leader and that these values of "others over self" may distinguish and separate those who can live out servant leadership versus those who cannot. McDonald (2003) suggests that leaders will tend to be driven either by their natural human ambitions for success or by some higher calling and purpose to serve others. Blanchard (2007) argues that servant leadership is "an inside job," a passion and a way of life for people and a natural extension of who they are, and not just a technique or gimmick that can be learned and used to boost short-term success.

Patterson and Stone (2003) identify seven key attributes that seem to be consistent throughout servant leader behaviors: altruism, empowerment, humility, genuine love, a customer service orientation, trust cultivation, and an inspired vision. Chan and Mak (2014) add that this trust helps to improve employee or follower job satisfaction and has a significant impact in the short-term.

A key factor driving this natural, internal propensity and compelling motivation to serve others is traditional faith, spirituality, and religious values that mirror those values, attitudes, and behaviors required to be a servant leader. Although it is likely that many or most religions espouse very important values that would influence a leader's ability to serve followers, we focus in this paper on Christian values and morals and utilize the Bible as a source of Christian teachings that could powerfully compel servant leaders to passionately serve others. Jesus Christ, for example, said "For even the Son of Man did not come to be served, but to serve, and to give His life as a ransom for many people" (Mark 10:45 – this and all following Bible passages taken from the New International Version). The "Fruits of the Holy Spirit" are viewed as a definitive description of the sacrificial and other-serving demeanor and behavior demanded of Christians as a result of their belief and faith in Christ. Galatians 5:22-23 reveals that "The Fruits of the Spirit are love, joy, peace, forbearance (patience), kindness, goodness, faithfulness, gentleness, and self-control. Against such things there is no law."

As we consider the example of servant leadership and how these leaders sacrifice their own interests for the greater interests of others, we should consider how closely this mirrors the example of how Christ lived out this service to others within the framework of submission to God. Christian principles, values, teachings, and behaviors suggest powerful internal motivation of servant leaders, and play a critical role in the natural and successful practice of the servant leader's attentive and selfless style and other-focused behaviors.

RELIGIOUS VALUES IN ORGANIZATIONS AND MANAGEMENT

Religion and its impact on people has always been a challenging avenue of scholarly inquiry. We have recently seen more research into spirituality and religion in business and the workplace (Biberman & Altman, 2004), but there is a great need for more studies that look at the influences of religion and spirituality in the practice of management (Fornaciari & Dean, 2009; Kniss & Campbell, 1997). As noted previously, most Americans identify themselves as Christians, although much fewer are devoted adherents to Christian teachings. Still, many Americans subscribe very passionately and faithfully to Christ's principles and teachings, and these guide much of their life in terms of values, beliefs, attitudes, and most importantly, behavior (Blau & Ryan, 1997; Vasconcelos, 2010). Neal, Lichtenstein, and Banner (2009) suggest that it is a natural progression of events for people who undergo spiritual changes to attempt to apply these changes to other areas of their lives, including work, and this tends to make them more engaged and happier.

Research over the years indicates that religious values (Christian as well as those of other religions) can influence very positive personal and organizational outcomes. Values can enhance decision-making processes (Vasconcelos, 2009), heighten the perception of non-ethical behavior (Giacalone & Jurkiewicz, 2003), improve moral reasoning (Sapp & Jones, 1986), create stronger organizational citizenship behaviors (Madison & Kellermanns, 2013), and lead to lower levels of prejudice and discrimination (Allen & Spilka, 1967). Religious values that are incorporated into

the workplace can provide meaning for workers, which in turn can contribute to personal happiness and good health and well-being (Gavin & Mason, 2004). Dyck and Schroeder (2005) found that these personal moral values impact our choices, work, and behavior in management settings, and Nash (1995) determined that these religious beliefs and values heavily influence decisions made by business leaders. Davidson and Caddell (1994) suggested that these values can actually cause individuals to see work as a divine calling, and this places increased significance on living out these values daily and impacting the lives of others. Angelidis and Ibrahim (2004), Kennedy and Lawton (1998), and McNichols and Zimmerer (1985) found that these religious values can have a very positive impact on ethics and ethical behavior.

Several studies found that religion-influenced approaches can have a number of very positive impacts on the practice of leadership, and include enhancements related to ethics and trust and credibility. One study indicated that individuals who put a high value on religion in their daily decision making were less likely to engage in questionable ethical practices (Smith & Oakley, 1996). Another study reached a similar conclusion that individuals who place a moderate or high importance on religion had superior ethical judgment than those who had low or no importance (Longnecker, McKinney, & Moore, 2004). Likewise, Rawwas, Swaidan, and Al-Khatib (2006) determined that religion had a large impact on reducing unethical responses to situations, and Worden (2005) found that religious components might enrich leadership activities, including ethics and credibility. Rodgers and Gago (2006) indicate that man has tried for centuries to use religiosity and religious values in influencing ethical considerations.

While some leaders certainly desire to allow their Christian beliefs to influence their leadership activities in the business world, Campbell (1957) has suggested that the reality of that business world is not conducive to this alignment, as a wall has been constructed between the two and most insist that the two be separate and distinct. Campbell found, even more than half a century ago, that businesses were making moves to minimize the expression of faith-based values in the workplace. He argues, however, that religious values should create the best outcomes for all for mankind, and that Christianity and religious values are not in opposition to capitalistic ideals.

One problem that has certainly limited this type of study in the past is that religious and spiritual adherence and beliefs are very closely-held and personal and can be very difficult to distinguish, characterize, and study. Also, many individuals maintain and exhibit a large gulf between their "religious life" and their "everyday life." For example, the linkage between religious values and the workplace is not always so clear and is not always so easy to ascertain, because some business people are very active in their religious pursuits but their workplace actions (and actions elsewhere) show little hard evidence of their faith or values (Weaver & Agle, 2002). Those who study leadership certainly do not have to look far to find a number of "Christian" leaders who have made very unethical decisions. Under no circumstances is hypocrisy viewed as a positive leadership behavior.

Other researchers discount the impact of religious values completely, suggesting that ethical values and training by itself never seems to do a complete job of influencing good behaviors or preventing bad ones (Conroy & Emerson, 2004; Sternberg, 2011). It has been argued that people have developed their own individual codes of right and wrong and their own values, and frequently deceive themselves as to how appropriate their actions are (Von Hippel & Trivers, 2011). Some

observe that there is no relationship or possibly a negative relationship between religious orientation and ethics (Clark & Dawson, 1996; Hegarty & Sims, 1978; Hegarty & Sims, 1979). Many reveal that people are good at self-justification and regularly fool themselves into thinking that their personal behavior, that actually is unethical or illegal, really is not wrong at all (Anand, Ashforth, & Joshi, 2004; Banaji, Bazerman, & Chugyh, 2003; Vanderveen, 2004). Smith, Wheeler, and Dierner (1975) concluded that there is no difference between religious and non-religious people in terms of dishonesty and cheating, and Kidwell, Stevens, and Bethke (1987) concluded that there was no relationship between religiosity and ethical judgments. Further, we are all familiar with scenarios where religion and faith have obscured and clouded solid evidence and hampered the decision making process entirely, leading to sub-optimal and dysfunctional outcomes.

So it is unclear even after many years of research and such an exhaustive course of scholarly inquiry, what the true influence of these values are on organizational and personal outcomes. Again, we argue in this paper that better definition and more refined descriptions of the functioning and mechanics of faith-influenced leadership behavior, namely from the perspective of influence on others, will help to clarify this important relationship.

THE PROBLEM OF POOR DEFINITION

Parris and Peachey (2013) conclude that there is no real consensus on an accepted definition of servant leadership, that there is no common context in which servant leadership is measured, and that there is no common measurement standard for research. They do suggest, however, that servant leadership is a valid theory that can help organizations and that can ultimately improve the well-being of followers. There seems to be little doubt that the internal values and motivations positively influence this selfless and serving practice of leadership (Blanchard, 2007). Other researchers reach similar conclusions, but note that it is difficult to accurately measure some parts of spirituality such as soul, spirit, and faith (Fornaciari & Dean, 2001). An additional obstacle is that there are widely varying definitions and measures of religiosity which are based on things such as church attendance and giving (Weaver & Agle, 2002), participation in public worship or private devotions (Agle & Van Buren, 1999), or based on the results of a test (Senger, 1970). Simply put, how we choose to define or measure "spirituality" or "religiosity" can significantly impact the results of a study by including people who realistically should not be considered "religious" in these contexts because they don't "practice what they preach."

In the absence of a commonly accepted definition of what religiosity is, some researchers have shifted the focus to how deeply these beliefs are held, regardless of what they are. For example, a person who holds religious beliefs internally to the degree that he or she treats those beliefs as an end rather than as a means to an end (Allport, 1966) is categorized as religious, regardless of what religion is identified. Likewise, a deep conviction that a creed or belief is supremely true (Allport & Ross, 1967) is another means of identifying someone who is religious. Satija (2009) contributes to our construct development with the suggestion that the religious person is the one who consistently applies spiritual principles and values to everyday activities and who allows these principles and values to play a strong role in decision-making and behavior, even though the particular religion that espouses those convictions is less relevant.

This approach to defining "religiosity" could help expand any research on servant leadership since treating others with respect (one outcome of "religiosity") can be held as a deep-seated belief even in those who do not consider themselves to be "religious." Maxwell (2003) builds on this idea when he presents the idea that most of the world's cultures have a concept similar to the "Golden Rule" in the Bible that "in everything, do to others what you would have them do to you" (Matthew 7:12).

A number of studies by Wimberly (1978; 1984; 1989) concluded that two people who follow the same religion and generally follow the same religious beliefs can act differently because of the level to which they hold those beliefs; one holds them to a level of self-identification and the other holds them as surface traits. They further found that the more deeply held these beliefs are, the more discomfort arises when the holder is forced to violate them. Weaver and Agle (2002) suggest that researchers should not simply measure "religiosity" but rather those particular beliefs that people hold closely within their religious stance. There is a difference between religion and spirituality, according to Mirtoff and Denton (1999), and approximately 60% of respondents in a survey had positive reactions to "spirituality" but negative reactions to "religion." One of their conclusions was that people seem to feel that religion does not necessarily belong in the workplace, but spirituality does.

This vagueness of what "religiosity" or "spirituality" means remains a troubling aspect of value-focused leadership motivations in general, and religiously-motivated, outwardly focused leadership behavior in particular, and makes it difficult to establish a framework for consistency among further studies. Simply put, it is difficult to the point of impossibility to accurately measure how religious or how spiritual someone is. Even in the absence of a good tool to measure such a quality, a discussion of how that quality could be implemented in leadership roles to produce excellent human outcomes is justified. In other words, even if we have limitations in measuring a worthwhile construct, building a plan around how we would use that construct has value.

A NEW LEADERSHIP MODEL – THEOCENTRIC LEADERSHIP

"Calling" is one of the primary components of spiritual well-being, and is defined by individuals as a sense that their work has meaning and purpose and that they have that work for a reason (Fry, 2003). Many in the workplace seem to believe that a balanced, well-rounded life is what secures happiness, and that means carrying faith-based views into a workplace that is often more concerned with financial goals and personal achievements. In order for these individuals to maintain a strong and balanced faith in all aspects of their lives, it is critical for them to be able to carry their religious beliefs and practices into the workplace and to allow these behaviors to influence the daily activities in all areas of their lives (Morgan, 2004).

Maciariello (2003) noted that Christ approached every situation with a firm desire to bring God glory in everything and to meet the needs of others, and He taught this approach to His followers. Likewise, Nehemiah and others in the Old Testament acted for Godly ends rather than personal goals, and made decisions based on what would honor God, seeking God's character and pursuing an intimate relationship with Him. This impacted Nehemiah's leadership style in everything from motivating people and delegating assignments, to dealing with adversity. Maciariello's (2003) conclusion was that steering servant leadership towards Biblical models would make them even

more effective. This had led us to a new model of leadership, based on putting God at the center of everything we do, which we will designate henceforth as "Theocentric Leadership."

We propose that Christian leaders desire to honor God by being great leaders, rather than by simply being good leaders, and argue that a definite, consistent internal motivation and guide to behavior will turn good servant leaders into great ones. Using Biblical vernacular, we argue that the Christian servant leaders will consistently put the needs of colleagues above their own, thereby fulfilling what Christ defined as the "second greatest commandment," to "love your neighbor as yourself" (Matthew 22:39). While this is an admirable position to take in life and in one's leadership role, it seems to still discount what Christ gave as the greatest commandment in the law, which was "Love the Lord your God with all your heart and with all your soul and with all your mind" (Matthew 22:37).

Therefore, we hold that servant leadership effectively addresses what Christ indicates is the second best thing that we can do, but falls short of the first. For Christians, a different approach to leadership, which loves the Lord with all our heart and soul and mind, would address the first. We argue that when a leader's actions seek first to love God and honor Him, that all other relationships reap the resulting benefits. Not only will leadership be characterized by selfless, other-serving, other-loving development of people, but all stakeholders will be treated better, scandals and unscrupulous temptations will be less likely, and the organization will be above reproach.

King Solomon says that "whatever your hand finds to do, do it with all your might" (Ecclesiastes 9:10), and Paul adds that "whatever you do, work at it with all your heart, as working for the Lord, not for human masters, since you know that you will receive an inheritance from the Lord as a reward. It is the Lord Christ you are serving" (Colossians 3:23-24).

Paul indicated that "we speak as those approved by God to be entrusted with the gospel. We are not trying to please people but God, who tests our hearts" (I Thessalonians 2:4). He also stated that "whether you eat or drink or whatever you do, do it all for the glory of God" (I Corinthians 10:31). It seems from Scripture that this God-centered approach to life is what God had in mind, and it has applicability to all of life, including the workplace and the leadership relationship.

A number of years ago, a popular cultural approach to decision-making was embodied in the acronym "WWJD" found on bracelets worn primarily by young people, which compelled people to ask in any situation "What Would Jesus Do?" before making any decisions or taking any actions. We attempt to use this as a foundation by considering first which potential action or decision would truly honor God, and which would be the decision that He would make in this position. If God Himself were in this spot making this decision, He would generally act out of concern for others and in a way that built up others. Christ actively lived out this concept of theocentric leadership while He lived on the earth. His decisions were always about selfless honoring of God, and those decisions tended to lift up others in the process. Further, Christ was focused on those who were in the greatest need of altruism and self-sacrifice, saying in Matthew 25 that "whatever you did for the least of these brothers and sisters, you also did for Me… and whatever you did not do for the least of these, you also did not do for Me."

The concept of God-centered, theocentric leadership is fundamentally simple, and one with which most committed and practicing Christians would likely not disagree. But how do Christian leaders actually put such a concept into practice? How do they effectively and consistently put God in the center of everything that they do? What does such an approach look like, or not look like, in terms of behavior? How does it manifest itself in practical actions, and what common activities should people refrain from doing in the future? People have varying and independent concepts of what God "wills" for humanity and personal lives, and there is often disagreement on what Christianity should look like in daily living.

Because of this, the questions posed above are not easy to answer. However, as stated earlier, any decision that is made within the framework of loving and serving God foremost, and loving others radically, is seemingly in keeping with these principles. The common denominator with these two ideas is that theocentric leaders are not acting with themselves in mind, and they are not seeking to better themselves at the expense of their relationship with God or other people. Instead, these theocentric leaders are seeking God's welfare and the welfare of others, and if they are benefitted or are honored as a result, that is a bonus. Beyond that, a knowledge that God is watching, and is ready to either say "Well done, thou good and faithful servant" (Matthew 25:21) or "Truly I tell you, I don't know you" (Matthew 25:12) helps frame their motivations, decisions, and daily behaviors and actions.

Theocentric leadership would, ideally, seek personal recognition, advancement, and glory only when it could be pointed or redirected to honor God or others for the gifts and abilities that He has given. Collins (2001) talks about the "window and the mirror" and expresses that the great leaders quickly look in the mirror when assessing blame, taking the brunt of the bad personally, and they look out the window when assessing credit and praise, deferring that to others. Leaders who put God at the center of all decisions and actions, and especially in leadership opportunities, consistently redirect praise and accolades to others and seek to develop their self-esteem, confidence, and positive perceptions by others.

In a similar logic, theocentric leadership would also cause leaders to shy away from the personal spotlight and the receiving of individual accolades for organizational accomplishments, preferring instead to let others stand in the light when it is favorable. In far too many circumstances today, we see leaders who are drawn to the center stage when praise is being handed out, even when those leaders deserve no more of the attention than anyone else who contributed to the success. The theocentric leader would instead be constantly looking to stay in the background, helping to orchestrate activities and goals, but not seeking credit when those goals were achieved. Leaders who put God at the center of everything that they do, and especially in leadership opportunities, realize that personal recognition simply means that other deserving individuals are missing opportunities to grow and receive recognition for the good things that they do, which oftentimes go unnoticed or overlooked by outsiders.

Additionally, theocentric leadership should cause leaders to rethink the structure of salaries, benefits, bonuses, and "perks" in a way that frees up more organizational resources for those less-glorified team members who deserve additional rewards but who rarely receive them. The American way of life stresses that individuals have a primary duty to provide for their families' needs, and certainly receiving more economic benefits allows leaders to share those benefits with

others through giving. But it can also be argued that in our modern world of economic plenty, there is a point where additional benefits only create marginal value, and additional dollars in the form of annual salary and bonuses only provide an incremental, and perhaps unnecessary, extra cushion. Theocentric leadership would compel leaders to reassess "wants" and focus more on "needs" in such a way as to assist others in meeting their "needs." An excellent example of how this might look in practice lies in a recent decision by the Board of Directors at Parkland Health and Hospital System in Dallas, Texas to take between three and four million dollars from a pool of money that traditionally had been used to pay executive bonuses and use it instead to improve the hourly wages of over 200 lower-paid workers. While we cannot be sure that this was prompted by a motive in line with theocentric leadership, the end results certainly provide an excellent picture of what this motivation and guidance looks like in real-world application. Leaders who put God at the center of everything that they do, and especially in leadership opportunities, realize that compensation and benefits that go beyond that which is "needed" and that are instead shared with colleagues at a lower hierarchical level can honor God by putting others first in a self-sacrificial way.

Finally, theocentric leadership would compel leaders to use information in a way that benefits others, unlike what we saw so often in the 1990s in companies like Enron, WorldCom, and Tyco, where leaders took information and used it for personal gain at the expense of their workers and stakeholders, many of whom lost nearly everything while their greedy corporate leaders retired to extravagant settings. Leaders who put God at the center of everything that they do, and especially in leadership opportunities, realize that providing others with critical information enhances the lives of everyone and prevents the select few from benefitting disproportionally.

In essence, theocentric leadership compels the leader to rethink every aspect of organizational leadership activities and to look at actions and decisions in light of what brings ultimate honor and glory to God, and to what improves the livelihood and well-being of others, even if it means that the leaders could possibly miss out on those same honors, benefits and rewards.

Some might legitimately ask why leaders in this modern "dog-eat-dog" world would even be interested in such a selfless approach to leadership. Why would anyone sacrifice self-interest so completely for the good of others? For Christians, there is a very compelling and powerful motivation for such behavior. Second Corinthians 5:9-10 says "So we make it our goal to please Him, whether we are at home in the body or away from it. For we must all appear before the judgment seat of Christ, so that each of us may receive what is due us for the things done while in the body, whether good or bad." Simply put, theocentric leaders can gain reward here on earth in the form of those things viewed as tangible, perishable, and purely temporal, or they can gain future reward in heaven in the form of those things viewed as intangible and eternal. The Bible teaches in this and other passages that one day, everyone will answer directly to God for their decisions and behaviors. For Christians, it makes sense to adopt a leadership philosophy now that addresses the critical problems so that the judgment to come is more in their favor.

Making it a highest priority to have God at the center of decisions, whether those decisions are related to work, family, relationships, finances, or whatever else one's "hands find to do," should make more of the ethical gray areas turn to black and white, and there seems to be evidence that this focus on God is beneficial and advantageous.

LITERATURE SUPPORT FOR THEOCENTRIC LEADERSHIP

Many writers over the years seem to have argued for a God-centered, virtuous professional and work life, even when they did not use that specific terminology. Vanderveen (2004) argued that Christians should strive to be like God, and that involves being holy, just, and loving. Martinez (2003) reasoned that God has to be included in a proper understanding of business and interactions, and that there is true value in incorporating the Christian faith into business processes. He concludes that this partnership of Christian faith and business life motivates workers better and improves ethics overall. While society does not mandate this partnership, and sometimes actively discourages it, the Christian should be striving for a higher standard than that for which the world strives. Economic success, hard work, integrity, efficiency, and cooperation are associated with Christian values, according to Ibrahim and Angelidis (2005). Worden (2003) concludes that when a leader's religiosity is tied to his identity, his ethical perspective is not genuine without incorporating those religious components into that ethical view. We could suggest that people who are wholeheartedly committed to Christian values would discover a major inner-conflict and disconnect if these values were not part of their overall life, to include their working hours.

Dyck and Schroeder (2005) believed that leadership should be an outward illustration by the manager through actions that reflect Godly behavior, since love is the essence of His character, and since He calls people in business and management to illustrate this character. Because people are driven by a sense of a higher calling (Sendjaya, Sarros, & Santora, 2008), placing God at the center of their perspective would help them become what they long to be and to live according to such a higher purpose.

Additional streams of research indicate that, in addition to the benefits to the individual leader and the organization, there are benefits to the followers when a leader adopts such a perspective. Sosik and Godshalk (2000), for example, argue that followers often look at their leaders as mentors and attempt to emulate their actions and approaches to situations, adding to the responsibility of leaders to do it right, because people are watching and learning. Lankau and Scandura (2002) agree with this concept, finding that people who are younger or newer to professional situations tend to develop their professional behaviors for the future by modeling what those in authority over them do. When leaders act with a God-centered approach to life, and when those activities are viewed as an integral part of who those leaders really are, rather than who those leaders believe that they are "supposed" to be, followers are more likely to do the same. Also, when followers believe that leaders possess and behave with positive qualities, there is added incentive to act like they do (Hannah, Walumbwa, & Fry, 2011; Mayer, Aquino, Greenbaum, & Kuenzi, 2012). It is ultimately the upper leadership in organizations that establishes the patterns for those below them (Peterson, et al., 2012), and people have higher levels of trust for good leaders than they do for bad or poor leaders (Dirks & Ferrin, 2002), so it is critical that leaders establish the proper style as they influence followers.

Thus, although leadership literature has never studied "theocentric leadership" exactly as we have proposed it, this concept seems to be in keeping with what other writers have concluded in relation to personal beliefs and how they impact others, and would seem to have numerous benefits for the leader, the organization, and the followers. Future research will need to address the measurement of these constructs and behaviors and seek to extend this powerful guiding motivation to other

world religions. Christians and adherents to other religions would likely agree that there is great value in seeking God's ultimate will in the practice of leadership. There is likely great motivation and powerful guidance associated with approaching life the way that God designed for it to be lived, within the scope of relationships and actions that seeks ultimately to honor God.

CONCLUSIONS, LIMITATIONS, AND IMPLICATIONS TO RESEARCH AND PRACTICE

Both of the authors have spent many years as the leaders of rather large and complex business organizations. Both are Christians, and both relied incessantly as leaders on the consistency of faith-based motivation that compels us to serve others and glorify God as an extension of our Christianity. We have observed many Christians over the years that seem to subscribe to the same concepts we have discussed in this paper. Further study is needed to investigate just how pervasive and important Christian-based theocentric leadership is in modern organizations. The literature seems to support its existence but little work has been done to investigate just how meaningful it is in motivating servant leaders.

From a practical standpoint, leaders need a strong compass for making important leadership decisions and choosing appropriate leadership behaviors. Future development of this construct and similar constructs in other religions will no doubt provide a consistent understanding of the motivation and types of behaviors needed for other-serving leadership. Further, development of this construct will allow Christian and other religious business leaders to see more concretely the types of leader behaviors (and motivations behind them) that are fruitful in business settings and solidify their understanding of how to practice their faith in secular settings.

It should be emphasized that it is not the intent of this paper nor the authors to insist that God-centered leadership is the sole or superior means of leading. Nor do we intend to proselytize or induce readers, researchers, or leaders to convert to Christianity because it somehow promotes and motivates a superior form of leadership practice. We do believe that this is a very real motivation for many leaders, and the motivation likely extends beyond the Christian faith and experience. Learning more about theocentric leadership should be very beneficial to leadership pedagogy, though this is certainly not intended as a normative model that suggests this to be a singular or superior approach. There are programs of study (and research) that intentionally seek to incorporate God and religious ideas into leadership practice, but we view the greater contribution of this research to be the suggestion that God provides potentially powerful motivation and guidance to a large percentage of leaders in the world. Researchers and teachers of leadership should be intent on finding other powerful motivations that make leaders more effective, more consistent, and more ethical.

Likewise, it has been our experience that leaders adopting a theocentric leadership approach are compatible with Christian as well as non-Christian followers. It is argued that while theocentric leaders can certainly influence their followers to behave in certain ways, it is not a priority of these leaders to "push" their Christian beliefs or demand certain beliefs from their followers. The major motivation for these leaders is to serve and develop followers as productive people, and their deeply held Christian beliefs drive this pursuit. But proselytizing and converting followers is not

believed to be the primary motivation. This is certainly another avenue for future researchers to pursue.

Finally, an argument could be made that people can be virtuous and altruistic servant leaders even when they do not include God among their motivators. We argue, however, that when God is part of the equation, there is a stronger and more thorough level of accountability for consistency and enthusiasm. We argue that the Christian faith can provide a clear and powerful motivation for leadership behaviors that are selfless, philanthropic, self-sacrificing, humane, and that serve, develop, and glorify others in the organization. These behaviors are a natural extension and visible outcome of the duty as Christians to glorify God in all that we do. Clearly, many of the world's other great religions teach similar humanistic, God-serving and other-serving altruistic behaviors. Further development of this work would explore application of this concept to other world religions. It is also likely that non-believers and non-religious individuals would be compelled by a strong internal sense of compassion, benevolence, and humanity to actively pursue these same sorts of other-serving behaviors. Overall this paper has taken a step back from the behaviors exhibited by servant leaders in an attempt to understand the internal motivations that are deemed so necessary by the servant leadership literature. A logical next step in research would be to develop and validate a measure of theocentric motivations to lead, and then to attempt to find correlation with consistent and effective servant leadership behavior in organizations.

REFERENCES

Agle, B. R., & Van Buren, H. (1999).God and man: The modern relationship. *Business Ethics Quarterly, 9,* 563-582.

Allen, R. O., & Spilka, B. (1967). Committed and consensual religion: A specification of religion-prejudice relationships. *Journal for the Scientific Study of Religion, 6*, 191-206.

Allport, G. W. (1966). The religious context of prejudice. *Journal for the Scientific Study of Religion, 6*, 191-206.

Allport, G. W., & Ross, J. M. (1967). Personal religious orientation and prejudice. *Journal of Personality and Social Psychology, 5*(4), 432-443.

Anand, V., Ashforth, B. E., & Joshi, M. (2004). Business as usual: The acceptance and perpetuation of corruption in organizations. *Academy of Management Executive, 18*(2), 39-55.

Angelidis, J., & Ibrahim, N. (2004). An exploratory study of the impact of degree of religiousness upon an individual's Corporate Social Responsiveness orientation. *Journal of Business Ethics, 51*(2), 119-128.

Banaji, M. R., Bazerman, M. H., & Chugyh, D. (2003). How (un)ethical are you? *Harvard Business Review, 81*(12), 56-64.

Biberman, J., & Altman, Y. (2004). Welcome to the new Journal of Management, Spirituality and Religion. *Journal of Management, Spirituality and Religion, 1*(1), 1-6.

Blanchard, K. (2007). *Leading at a Higher Level*. Upper Saddle River, NJ: Pearson/ Prentice Hall.

Blau, G., & Ryan, J. (1997). On measuring work ethic: A neglected work commitment facet. *Journal of Vocational Behavior, 51*(3), 435-448.

Campbell Jr, T. C. (1957). Capitalism and Christianity. *Harvard Business Review, 35*(4), 37-44.

Chan, S. C. H., & Mak, W. M. (2014) The impact of servant leadership and subordinates' organizational tenure on trust in leader and attitudes, *Personnel Review, 43*(2), 272-287.

Clark, J. W., & Dawson, L. E. (1996). Personal religiousness and ethical judgments. *Journal of Business Ethics, 15(3),* 359-372.

Cohn, N. (2015, May 12). Big drop in share of Americans calling themselves Christian. *The New York Times*. Retrieved from http://www.nytimes.com/2015/05/12/upshot/big-drop-in-share-of-americans-calling-themselves-christian.html?abt=0002&abg=1

Collins, J. (2001). G*ood to Great: Why Some Companies Make the Leap… and Others Don't*. New York, NY: HarperCollins Publishers, Inc.

Conroy, S. J., & Emerson, T. L. N. (2004). Business ethics and religion: Religiosity as a predictor of ethical awareness among students. *Journal of Business Ethics, 50*(4), 383-396.

Davidson, J. C., & Caddell, D. P. (1994). Religion and the meaning of work. *Journal for the Scientific Study of Religion, 33*, 135-147.

Dirks, K.T. and Ferrin, D.L. (2002). Trust in leadership: Meta-analytic findings and implications for research and practice. *Journal of Applied Psychology, 87*, 611-628.

Dyck, B., & Schroeder, D. (2005). Management, theology and moral points of view: Towards an alternative to the conventional materialist-individualist ideal-type of management. *Journal of Management Studies, 42*(4), 705-735.

Fornaciari, C. J., & Dean, K. L. (2001). Making the quantum leap: Lessons from physics on studying spirituality and religions in organizations. *Journal of Organizational Change Management, 14*(4), 335-351.

Fornaciari, C. J., & Dean, K. L. (2009). Foundations, lessons, and insider tips for MSR research. *Journal of Management, Spirituality and Religion, 6*(4), 301-321.

Fry, L. (2003). Toward a theory of spiritual leadership. *The Leadership Quarterly, 14*(6), 693-707.

Gavin, J. H., & Mason, R. O. (2004). The virtuous organizations: The value of happiness in the workplace. *Organizational Dynamics, 33*(4), 379-392.

Giacalone, R. A,. & Jurkiewicz, C. L. (2003). Right from wrong: The influence of spirituality on perceptions of unethical business activities. *Journal of Business Ethics, 46*(1), 85-97.

Greenleaf, R. K. (1970). *The Servant as Leader*. Newton Centre, MA: The Robert K. Greenleaf Center.

Hannah, S. T., Walumbwa, F. O., & Fry, L. W. (2011). Leadership in action teams: Team leader and members' authenticity, authenticity strength, and team outcomes. *Personnel Psychology, 64*(3), 771-802.

Hegarty, W. H., & Sims, Jr, H. P. (1978). Some determinants of unethical decision behavior: An experiment. *Journal of Applied Psychology, 63*(4), 451-457.

Hegarty, W. H., & Sims, Jr, H. P. (1979). Organizational philosophy, policies, and objectives related to unethical decision behavior: A laboratory experiment. *Journal of Applied Psychology, 64*(3), 331-338.

Ibrahim, N. A., & Angelidis, J. P. (2005). The long-term performance of small business: are there differences between 'Christian-based' companies and their secular counterparts? *Journal of Business Ethics, 58*(1), 187-193.

Kennedy, E. J,. & Lawton, L. (1998). Religiousness and business ethics. *Journal of Business Ethics, 17*(2),163-175.

Kidwell, J. M., Stevens, R. E., & Bethke, A. L. (1987). Differences in the ethical perceptions between male and female managers: Myth or reality? *Journal of Business Ethics, 6*(6), 489-493.

Kniss, F., & Campbell, D. T. (1997). The effect of religious orientation on international relief and development organizations. *Journal for the Scientific Study of Religion, 36*(1), 93-103.

Langer, G. (2015, July 18). Poll: Most Americans say they're Christian. *abc News*. Retrieved from http://abcnews.go.com/US/story?id=90356.

Lankau, M. J., & Scandura, T. A. (2002). An investigation of personal learning in mentoring relationships: Content, antecedents, and consequences. *Academy of Management Journal, 45*(4), 779-790.

Liden, R. C., Wayne, S. J., Liao, C., & Meuser, J. D. (2013). Servant leadership and serving culture: influence on individual and unit performance. *Academy of Management Journal, 56(*6).

Longnecker, J. G., McKinney, J. A., & Moore, C. W. (2004). Religious intensity, evangelical Christianity, and business ethics: an empirical study. *Journal of Business Ethics, 55*(4), 373-386.

Maciariello, J. (2003). Lessons in leadership and management from Nehemiah. *Theology Today, 60*(3), 397-407.

Madison, K. and Kellermanns, F. W. (2013). Is the spiritual bond bound by blood? An exploratory study of spiritual leadership in family firms. *Journal of Management, Spirituality, and Religion, 10*(2), 159-182.

Martinez, R. J. (2003, Fall). Teaching Strategic Management from a Christian perspective. *The Journal of Biblical Integration in Business*, Part 1, 69-98.

Maxwell, J. C. (2003). *There's No Such Thing as "Business Ethics"* New York: Center Street.

Mayer, D. M., Aquino, K., Greenbaum, R. L., & Kuenzi, M. (2012). Who displays ethical leadership, and why does it matter? An examination of antecedents and consequences of ethical leadership. *Academy of Management Journal, 55*(1), 151-171.

McDonald, G. (2003). *Ordering Your Private World*. Nashville, TN: Nelson Books.

McNichols, C. W. and Zimmerer, T. W. (1985). Situational ethics: An empirical study of differentiators of student attitudes. *Journal of Business Ethics, 4*(3), 175-180.

Mirtoff, I. I., & Denton, E. A. (1999). A study of spirituality in the workplace. *Sloan Management Review, 40*, 83-92.

Morgan, J. F. (2004). How should businesses respond to a more religious workplace? *SAM Advanced Management Journal, 69*(4), 11-19.

Nash, L. (1995). The evangelical CEO. *Across the Board, 31*(2), 26-34.

Neal, J. A., Lichtenstein, M. B., and Banner, D. (2009). Spiritual perspectives on individual, organizational, and societal transformation. *Journal of Organizational Change Management, 12*(3), 175-185.

Northouse, P. G. (2013). *Leadership: Theory and Practice* (6th edition). Thousand Oaks, CA: Sage Publications.

Parris, D. L., & Peachey, J. W. (2013) A systematic literature review of servant leadership theory in organizational contexts. *Journal of Business Ethics 113*(3), 377-393.

Patterson, K., & Stone, A. G. (2003). The seven habits of servant leaders. *Regent Business Review, 4,* 13-14.

Peterson, S., Galvin, B. M., & Lange, D. (2012). CEO servant leadership: Exploring executive characteristics and firm performance. *Personnel Psychology, 65*(3), 565-596.

Rawwas, M. Y. A., Swaidan, Z., & Al-Khatib, J. (2006). Does religion matter? A comparison study of the ethical beliefs of marketing students of religious and secular universities in Japan. *Journal of Business Ethics, 65*(1), 69-86.

Rodgers, W. and Gago, S. (2006). Biblical scriptures underlying six ethical models influencing organizational practices. *Journal of Business Ethics, 64*(2), 125-136.

Russell, R. F. (2001). The role of values in servant leadership, *Leadership & Organization Development Journal, 22*(2), 76 – 84.

Sapp, G. L. & Jones, L. (1986). Religious orientation and moral judgment. *Journal for the Scientific Study of Religion, 25*, 208-214.

Satija, K. C. (2009). What kind of leadership model would be required to create vision, mission and directions in the changing global context? *Advances in Management, 2*(12), 25-33.

Sendjaya, S., Sarros, J. C., & Santora, J. C. (2008). Defining and measuring servant leadership behavior in organizations. *Journal of Management Studies, 45*(2), 402-424.

Senger, J. (1970). The Religious Manager. *Academy of Management Journal*, *13*(2), 179-186.

Smith, P. L. & Oakley, E. F. (1996). The value of ethics education in business school curriculum. *College Student Journal, 30*, 274-283.

Smith, R. E., Wheeler, G., & Diener, E. (1975). Faith without works: Jesus people, resistance to temptation, and atruism. *Journal of Applied Social Psychology, 5*(4), 320-330.

Sosik, J. J., & Godshalk, V. M. (2000). Leadership styles, mentoring functions received, and job-related stress: A conceptual and preliminary study. *Journal of Organizational Behavior, 21*(4), 365-390.

Sternberg, R. (2011). Ethics from thought to action. *Educational Leadership, 68*(6), 34-39.

Stone, A. G., Russell, R. F., & Patterson, K. (2004). Transformational versus servant leadership: a difference in leader focus, *Leadership and Organization Development Journal 25*(4), 349-361.

Vanderveen, S. (2004). A radical, reformed Christian rejoinder to Martinez's "Teaching strategic management from a Christian perspective." *The Journal of Biblical Integration in Business*.7-13.

Vasconcelos, A. F. (2009). Prayer, intuition, and managerial decision-making processes: A religious-based framework. *Management Decision, 47*(6), 930-949.

Vasconcelos, A. F. (2010). Spiritual development in organizations: A religious-based approach. *Journal of Business Ethics, 93*(4), 607-622.

Von Hippel, W., & Trivers, R. (2011). The evolution and psychology of self-deception. *Behavioral and Brain Sciences, 34*(1), 1-56.

Weaver, G. R., & Agle, B. R. (2002). Religiosity and ethical behavior in organizations: A symbolic interactionist perspective. *Academy of Management Review, 27*(1), 77-97.

Wimberley, R. C. (1978). Dimensions of commitment: Generalizing from religion to politics. *Journal for the Scientific Study of Religion, 17*, 225-240.

Wimberley, D. W. (1984). Socioeconomic deprivation and religious salience: A cognitive behavioral approach. *Sociological Quarterly, 25*(2), 223-238.

Wimberley, D. W. (1989). Religion and role-identity: A structural symbolic interactionist conceptualism of religiosity. *The Sociological Quarterly, 30*(1),125-142.

Worden, S. (2003). The role of religious an nationalist ethics in strategic leadership; The case of J. N. Tata. *Journal of Business Ethics, 47*(2), 147-164.

Worden, S. (2005). Religion in strategic leadership: A positivistic, normative/theological and strategic analysis. *Journal of Business Ethics, 57*(3), 221-239.

A STUDY OF FACTORS INFLUENCING
MACHINE TRANSLATION COMPREHENSION

Mahesh Vanjani, Texas Southern University
vanjanim@tsu.edu

Milam Aiken, University of Mississippi
maiken@bus.olemiss.edu

Mina Park, Southern Connecticut State University
Parkm2@southernct.edu

ABSTRACT

Keywords: Machine Translation, Foreign Language Translation, Translation Comprehension

INTRODUCTION

Every day, millions of text passages are translated from one language to another by machine because of these systems' high speed and low cost compared to human interpretation (Cajvaneau, 2002). This machine translation often results in less than perfect accuracy and concomitant poor human comprehension. As a result, one study (Harzing, Koster & Magner, 2011) found that 50% of a survey's respondents thought the technology was useless beyond getting a very basic understanding of the topic of the translated materials.

Several studies have shown varying degrees of comprehension of translated text among readers. For example, Table 1 summarizes the results of experiments involving multilingual groups exchanging comments with automatic translation provided by the meeting software, and reported understanding varied from 40% to 100%. Text quality varied among the studies, and some translations were undoubtedly better than others. For example, some evidence suggests that western European languages translate to English well because of their similarities (Aiken & Balan, 2011). But, there can be human differences in addition to lingual, text, and software dissimilarities. If we can ascertain what factors affect understanding of mistranslations, we might better determine which potential users of translation software could benefit most.

Table 1. Varying Amounts of Comprehension of Translated Text
(Source: Aiken, 2008)

Study	Group Members	Understood Accuracy
1	24 English in 4 groups. Facilitator added Spanish comments	Spanish->English: 100%
2	3 Spanish, 6 English	English->Spanish: 96% Spanish->English: 85%
3	3 Spanish, 5 English	NA
4	2 Spanish, 2 English	English->Spanish:91%

		Spanish->English: 81%
5	1 German, 1 French, 2 English	German->English: 100% German->French: 40% French->German: 40% French->English: 60% English->German: 80% English->French: 80%
6	2 English, 2 Chinese	English->Chinese: 93% Chinese->English: 100%
7	Translation of 2 English-only- meeting comments. 3 Spanish evaluators	English->Spanish: 72%-74%
8	Translation of 2 English-only- meeting comments. 3 Chinese, 3 Japanese, 3 Korean evaluators	English->Chinese: 43%-74% English ->Japanese: 75%-78% English->Korean: 55%-78%

Humans have widely varying skills and abilities, and they comprehend text differently, especially when the passage contains numerous word choice or spelling errors (Schiefele, 1999). But, it is not clear exactly what factors influence this understanding. For example, it is reasonable to assume that people who know their native language extremely well might be more able to obtain the meaning of text despite numerous grammatical and word-choice errors. Also, those who are more knowledgeable about the subject matter might be able to extract recognizable key nouns and phrases, leading to a better grasp of the material. Experience with a different language might help (Gottardo & Mueller, 2009). For example, if a person knows some Spanish, even if the translation is in English, he or she might be able to understand garbled text because of previous exposure to translation errors. Finally, those with greater motivation to understand might try harder and spend more time trying to detect meaning.

In this paper, we explore some of these variables with a survey of English speakers exposed to poorly translated text. As in previous studies, results are somewhat inconclusive, necessitating further research on this elusive concept.

MACHINE TRANSLATION ERRORS

People can miscomprehend a passage of text even if the translation is perfect, for example, when the original text is unclear or has errors. With the addition of translation errors, however, comprehension can become even more difficult. Several types of errors can occur with machine translation, and Koponen (2010) describes five possible classifications:

1. **Omitted concept.** A word or words are missing in the translation that consequently leave out some meaning.
2. **Added concept.** A word or words are added in the translation that bring extra meaning not present in the source text.
3. **Untranslated concept.** A word or words from the original text appear verbatim in the target text with no change in language.
4. **Mistranslated concept**. A word or words are translated to the target language but convey the wrong meaning.

5. **Substituted concept.** The translation is not identical, but can be considered a valid replacement for the original meaning.

A more detailed list of possible machine translation errors includes (Irvine, Morgan, Carpuat, Daumé & Munteanu, 2013; Popović & Ney, 2011; Vilar, Xu, d'Haro & Ney, 2006):

1. **Transliterated words**. If a word is not recognized because it is misspelled, slang, an acronym, outside the dictionary, or for another reason, a word can be injected literally into the translation. For example, "My nme is Adam" could be translated to "Meine nme ist Adam" in German because of the incorrect spelling of "name."
2. **Wrong meaning of word chosen**. Many languages have words with different meanings, and typically, the correct choice is determined by the context of the surrounding words. For example, a key used on a piano is "tecla" in Spanish, but a key used for a lock is "llave." Also, a proper noun could be translated literally, e.g. "Mr. Street" might be translated to "Herr Straße" in German instead of "Herr Street."
3. **Word order rearranged**. If a sentence is complex with several clauses, the word order might not be correct. Translation among western Europeans languages with similar grammatical structures is often good, but machine translations between radically different languages (e.g., English to Chinese) can result in more errors (Linh, 2013).
4. **Other grammatical errors**. Other grammatical errors can include changes in verb tense, lack of parallel structure, lack of subject/verb agreement, vague pronoun references, incorrect punctuation, etc.
5. **Idioms**. Idioms are often used in informal discussions, but are difficult to translate. For example, the equivalent for "pulling my leg" as in kidding or joking is "tomar el pelo" in Spanish, which means literally "to take the hair." However, many translation systems are not sophisticated enough to recognize equivalent idioms and instead translate each word literally, possibly causing confusion.
6. **Poor phrasing**. Some translations might be technically correct, but could be worded better. For example, a translation of "Ich heiße John" from German literally means "I am called John," but better phrasing to English would be "My name is John."
7. **Miscellaneous errors**. Several other errors can occur including use of informal addresses instead of formal (e.g., using "du" instead of "Sie") in German. While the meaning might be understood, the relationships among the principle actors in the passage might not be clear.

The following provides more examples of possible machine translation errors using Google Translate (http://translate.google.com):

1. The Universal Declaration of Human Rights in Chinese (http://www.omniglot.com) was translated to "Human beings are born free in dignity and rights are equal. They are endowed with reason and conscience and should act in a spirit of brotherhood treat each other" but the correct translation should be "All human beings are born free and equal in dignity and rights. They are endowed with reason and conscience and should act towards one another in a spirit of brotherhood." Thus, most of the meaning is conveyed, but there are a few words in the wrong order, causing confusion.

2. In this machine translation from Japanese (https://www.yaqs.co.jp/help/sample5): "If something unforeseen circumstances occur, please immediately inform the Company's employees," the word "something" is added unnecessarily.

3. This machine translation from Japanese (https://www.yaqs.co.jp/help/sample3): "Cold-warm OK! Light-small-unbreakable stainless thermos. Because it is the diameter of the hand is likely to enter a wide-mouthed, it has become easier to also clean the inside," is a little difficult to understand because of missing words and unnatural phrasing. A better translation would be: "OK for cold storage and hot storage! This is a light, small, unbreakable stainless steel thermos flask. It has a wide mouth, for easier cleaning inside."

4. The translation of "My hovercraft is full of eels" from Hindi (http://www.omniglot.com) rendered "My Maaderane Srpminon are full of boats" which is very difficult to understand. Words are out of order and no equivalent English words for "Maaderane Srpminon" were found.

COMPREHENSION FACTORS

As a reader goes through a passage, he or she determines the main idea, supporting details, and overall structure of the text. Readers think about many things as they try to comprehend a passage. More specifically, they perform the following activities (Tompkins, 2009):

- Activate prior knowledge
- Examine the text to uncover its organization
- Make predictions
- Connect to their own experiences
- Create mental images
- Draw inferences
- Notice symbols and other literary devices
- Monitor their understanding

Many previous studies have suggested that several factors can affect reading comprehension, including background knowledge, vocabulary mastery, reading speed, motivation, working memory, and critical thinking skills (Cain, Oakhill & Bryant, 2004; García, 1991; Gough, Hoover & Peterson, 1996; McVay & Kane, 2012; Mancilla-Martinez & Lesaux, 2010; Proctor, Carlo, August & Snow, 2005; Schmitt, Jiang, & Grabe, 2011, Wang & Guthrie, 2004). For example, one study (Wise, Sevick, Morris, Lovett, Wolf, Kuhn, & Meisinger, 2010) found that there was a fairly strong correlation (0.70) between oral reading fluency and reading comprehension. That is, fluency with which an individual translates text into spoken words is an indicator not only of word recognition skill but also of an individual's comprehension of that text (Fuchs, Fuchs, Hosp, & Jenkins, 2001). This would seem to indicate that language fluency could predict comprehension.

Several assessments exist to measure fluency, including the Cloze test (Fuchs, Fuchs, & Maxwell, 1988). With this test, words are left out of a passage of text and a reader is asked to fill in the blanks with the most appropriate words. In this way, the reader must use background information and understand the text, using reasoning skills.

A closely related assessment is the Maze test in which readers are given multiple choices for each blank, thus making it a little easier to answer. In one study (Aiken, Park, & Lindblom, 2013), 80 undergraduate college students took a Maze test using grammatically correct English and a TOEFL exam using text translated poorly from Malay to English. Surprisingly, results showed that there was a significant, but negative correlation between the Maze test and the translated text scores (R = -0.225, p = 0.045). That is, those who did well on the English fluency test understood less of the poor translations.

Simply asking a person how much he or she comprehends upon reading a passage of translated text is often unreliable. For example, in one study (Aiken & Balan, 2011), 75 students got 73% of the reading comprehension questions correct, despite reporting being able to understand only about 63% of the text. The researchers surmised that the students might have underestimated how much they actually understood because of emotional reactions to the poor grammar and word choice errors in the translation.

Thus, prior studies are somewhat inconclusive about what personal characteristics affect human comprehension. Further, only a few have investigated how readers attempt to understand text with errors.

HYPOTHESES

The National Reading Panel (2000) has suggested several reader qualities that might affect comprehension, and these are summarized in Table 2.

Table 2. Factors affecting reading comprehension
(Source: Tompkins, 2009)

Factor	Role in Comprehension
Background Knowledge	Students activate their world and literary knowledge to link what they know to what they're reading.
Vocabulary	Students recognize the meaning of familiar words and apply word-learning strategies to understand what they're reading.
Fluency	Students have adequate cognitive resources available to understand what they're reading when they read fluently.
Comprehension Strategies	Students actively direct their reading, monitor their understanding, and troubleshoot problems when they occur.
Comprehension Skills	Students automatically note details that support main ideas, sequence ideas, and use other skills.
Motivation	Motivated students are more engaged in reading, more confident, and more likely to comprehend successfully.

We modify this list of factors and derive the following hypotheses:

H1:   A reader's interest and motivation are positively correlated with reading comprehension.

If a reader is interested and motivated to understand, he or she will spend more effort and perhaps be more successful in determining the meaning.

H2:   A reader's target language fluency is positively correlated with reading comprehension.

If a reader knows the text language well (including grammatical and vocabulary knowledge), he or she might be more likely to understand text with many errors.

H3:   A reader's foreign language fluency is positively correlated with reading comprehension.

A reader's exposure to another language, along with familiarity or the problems of mistranslations, might cause him or her to recognize the meaning of poorly translated text more easily.

H4:   A reader's familiarity with the subject of the text is positively correlated with reading comprehension.

A reader might be more likely to understand text if he or she is more familiar with some of the common words and phrases associated with the topic.

STUDY

Sample English text (shown in Appendix 1) was obtained from an online story at cnn.com, (the Flesch Reading Ease score of the text passages was 46.6 (0 to 100 scale: 100 easiest) and the Grade Level score was 11.8.) The text was then translated to Malay with Google Translate (http://translate.google.com/), and then translated back to English with the same tool, resulting in the poor translation shown in the same Appendix.

A sample of 96 undergraduate college students (mostly American, but some foreign) were asked to read each paragraph of the poor translations (P1, P2, and P3) and write in English what they thought was meant, using correct grammar and word choices. Next, students were asked to complete a survey shown in Appendix 2 that assessed their language fluency, motivation, and topic knowledge. Finally, two objective English-speaking reviewers evaluated the students' written text to determine how closely it matched the original.

As indicated in Table 3, the students reported being able to understand about ¾ of the text and were generally interested and motivated. They knew English well, and some reported knowing a foreign language. Their knowledge of the subject was only average, however, possibly because the text was not completely understandable. Yet, the reviewers reported that approximately 88% of the students' text equivalents were accurate. Thus, the students apparently underestimated how much they comprehended from the passages. This result is concordant with some prior studies (e.g., Aiken, Wang, Gu, & Paolillo, 2011) which showed subjects can underestimate how much they understand when reading.

Table 3. Descriptive Statistics

	Mean %	Std. Deviation
Paragraph 1 self-reported comprehension	73.44	8.22
Paragraph 2 self-reported comprehension	72.45	7.91
Paragraph 3 self-reported comprehension	73.02	8.38
Interested in topic (1 – 7 scale)	4.65*	1.49
Motivated to understand (1 – 7 scale)	5.33*	1.41
English Fluency (1 – 7 scale)	5.91*	1.41
Vocabulary (1 – 7 scale)	5.54*	1.37
Grammatical skills (1 – 7 scale)	4.47*	1.33
Foreign Language (1 – 7 scale)	3.65	2.07
Familiarity in Subject (1 – 7 scale)	4.99*	1.61
Reviewer evaluation of written equivalent	88.13	16.31

* = significantly different from median value of 4 at $\alpha = 0.01$

Analysis of Variance showed that the identified factors overall had no significant effect on paragraph1 understanding (F = 1.19, p = .32), paragraph2 understanding (F = 1.54, p = 0.16), or paragraph3 understanding (F = 1.46, p = 0.19).

As shown in the correlation analysis in Table 4, there were significant, positive correlations among reported comprehensions of paragraphs 1, 2, and 3, indicating that those who did not understand one passage tended not to understand another. Those who were interested were also motivated, English fluency was positively correlated with vocabulary knowledge and grammatical skills, and those who were familiar with the topic also were more fluent.

Table 4. Correlations

	Paragraph 2	Paragraph 3	Interested	Motivated	English Fluency	Vocabulary	Grammatical Ability	Foreign Language	Familiarity in Subject	Reviewers
P1	.618 ** .000	.577 ** .000	.135 .189	.154 .133	.096 .350	.137 .183	.092 .374	-.210 * .040	.074 .472	.253 * .013
P2		.601 ** .000	.034 .741	.124 .229	.101 .327	.168 .102	.175 .088	-.185 .072	.126 .222	.187 .068
P3			.078 .448	.034 .742	.051 .621	.182 .076	.207 * .043	-.147 .152	.104 .315	.142 .168
Interested				.724 ** .000	.286 ** .005	.416 ** .000	.122 .236	.027 .792	.139 .177	.077 .459
Motivated					.328	.385	.174	.073	.113	.101

						** .001	** .000	.090	.478	.275	.329
English Fluency						.759 ** .000	.502 ** .000	-.019 .856	.236 * .021		.134 .192
Vocabulary							.582 ** .000	-.002 .983	.270 ** .008		.150 .145
Grammar Mistakes								.103 .317	.341 ** .001		-.022 .830
Foreign Language									.135 .191		-.214 * .037
Familiarity in Subject											.019 .852

**Correlation is significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

However, foreign language ability had a significant, negative correlation with the reported comprehension of paragraph 1 and a significant, negative correlation with the reviewers' evaluations of student text quality. This is in direct contradiction to our expectations.

Finally, grammatical ability had a significant, positive correlation with the comprehension of only one paragraph, #3. Thus, only H2 is partially supported.

A regression analysis (shown in Table 5) was also conducted in an attempt to determine the effects of the principle factors influencing comprehension. Using only Interested, Fluency, Familiarity, and Foreign Language variables as independent factors and Percentage Understood as the dependent factor, results show that only Foreign Language was significant as a predictor, thus supporting the correlation result.

Table 5. Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	83.361	8.897		9.369	.000
Interested	.526	1.164	.048	.452	.652
Fluency	1.312	1.255	.113	1.045	.299
Familiarity	.149	1.069	.015	.140	.889
Foreign Language	-1.694	.808	-.215	-2.095	.039

Dependent Variable: Percentage

CONCLUSION

This study attempted to identify factors involved in the comprehension of poorly translated text, but only two significant correlations were found, and one was contrary to our prediction. Thus, none of the four hypotheses are supported. Nevertheless, we believe that the results could serve as the basis for further investigation into the variables associated with understanding the meanings of translations.

The study has several limitations, however. First, the samples of mistranslated text were very short, and they might have been too difficult to understand. Other samples with a greater variation of comprehension difficulty or a more familiar subject matter might have resulted in different results.

Another limitation is that there could be further unknown, confounding factors involved in reading comprehension. More research is needed to more fully elicit how readers understand text. For example, subjects should be asked specifically why they did not understand a specific passage.

REFERENCES

Aiken, M. (2008). Multilingual collaboration in electronic meetings. In N. Kock (Ed.), *Encyclopedia of E-Collaboration* (pp. 457-462). Hershey, PA: Information Science Reference.

Aiken, M., & Balan, S. (2011). An analysis of Google Translate accuracy. *Translation Journal*, *16*(2).

Aiken, M., Park, M., & Lindblom, T. (2013). Language fluency as a factor in machine translation comprehension. *International Journal of Computers and Technology*, *10*(2), 1349-1355.

Aiken, M., Wang, J., Gu, L., & Paolillo, J. (2011). An exploratory study of how technology supports communication in multilingual groups. *International Journal of e-Collaboration*, *7*(1), 17-29.

Cain, K., Oakhill, J., & Bryant, P. (2004). Children's reading comprehension ability: Concurrent prediction by working memory, verbal ability, and component skills. *Journal of Educational Psychology*, *96*(1), 31.

Cajvaneau, D. (2002). Regulating the new Babylon. *New Presence: The Prague Journal of Central European Affairs*, *4*(2), 22.

Fuchs, L., Fuchs, D., Hosp, M., & Jenkins, J. (2001). Oral reading fluency as an indicator of reading competence: A theoretical, empirical, and historical analysis. *Scientific Studies of Reading, 5*(3), 239–256.

Fuchs, L., Fuchs, D., & Maxwell, L. (1988). The validity of informal reading comprehension measures. *Remedial and Special Education*, *9*(2), 20-28.

García, G. (1991). Factors influencing the English reading test performance of Spanish-speaking Hispanic children. Cambridge, MA: Bolt, Beranek and Newman, Inc.

Gottardo, A., & Mueller, J. (2009). Are first-and second-language factors related in predicting second-language reading comprehension? A study of Spanish-speaking children acquiring English as a second language from first to second grade. *Journal of Educational Psychology*, *101*(2), 330-344.

Gough, P., Hoover, W., & Peterson, C. (1996). *Reading comprehension difficulties: Processes and intervention*. Mahwah, NJ: Erlbaum.

Harzing, A., Köster, K., & Magner, U. (2011). Babel in business: The language barrier and its solutions in the HQ-subsidiary relationship. *Journal of World Business*, *46*(3), 279–287.

Irvine, A., Morgan, J., Carpuat, M., Daumé III, H., & Munteanu, D. (2013). Measuring machine translation errors in new domains. *Transactions of the Association for Computational Linguistics*, *1*, 429-440.

Koponen, M. (2010). Assessing machine translation quality with error analysis. *Electronic Proceedings of the KäTu Symposium on Translation and Interpreting Studies, 4*.

Linh, T. (2013). Survey of common errors of English to Vietnamese Google Translator in Business Contract. *Open Journal of Modern Linguistics*, *3*(2), 101-107.

McVay, J., & Kane, M. (2012). Why does working memory capacity predict variation in reading comprehension? On the influence of mind wandering and executive attention. *Journal of Experimental Psychology*, *141*(2), 302-320.

Mancilla-Martinez, J., & Lesaux, N. (2010). Predictors of reading comprehension for struggling readers: The case of Spanish-speaking language minority learners. *Journal of Educational Psychology*, *102*(3), 701–711.

National Reading Panel (US), National Institute of Child Health, and Human Development (US). (2000). *Report of the national reading panel: Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction: Reports of the subgroups*. National Institute of Child Health and Human Development, National Institutes of Health.

Popović, M., & Ney, H. (2011). Towards automatic error analysis of machine translation output. *Computational Linguistics*, 37(4), 657-688.

Proctor, C., Carlo, M., August, D., & Snow, C., (2005). Native Spanish-speaking children reading in English: Toward a model of comprehension. *Journal of Educational Psychology*, 97(2), 246-256.

Schiefele, U. (1999). Interest and learning from text. *Scientific Studies of Reading*, *3*, 257–279.

Schmitt, N., Jiang, X., & Grabe, W. (2011). The percentage of words known in a text and reading comprehension. *The Modern Language Journal*, *95*(1), 26-43.

Tompkins, G. (2009). *Literacy for the 21st Century: A Balanced Approach.* New York, NY: Pearson.

Vilar, D., Xu, J., d'Haro, L., & Ney, H. (2006). Error analysis of statistical machine translation output. In *Proceedings of LREC*, 697-702.

Wang, J., & Guthrie, J. (2004). Modeling the effects of intrinsic motivation, extrinsic motivation, amount of reading, and past reading achievement on text comprehension between U.S. and Chinese students. *Reading Research Quarterly*, *39*(2), 162–186.

Wise, J., Sevcik, R., Morris, R., Lovett, M., Wolf, M., Kuhn, M., Meisinger, B., & Schwanenflugel, P. (2010). The relationship between different measures of oral reading fluency and reading comprehension in second-grade students who evidence different oral reading fluency difficulties. *Language Speech and Hearing Services in Schools*, *41*(3), 340-348.

APPENDIX 1

Original Text for the Translation

A 60-foot-wide sinkhole formed under a resort in central Florida late Sunday, forcing guests out of their rooms as one three-story building collapsed and another slowly sank.

Guests at the Summer Bay Resort in Clermont called for help before the collapse, saying they heard loud noises and windows cracking.

All guests inside the buildings -- an estimated 35 people, authorities said -- were evacuated before the first structure crumbled.

Translated Text

Sinkhole 60 feet wide and three-storey building collapsed and sank slowly to the other to force guests to their rooms, formed in Orlando late Sunday resort.

Summer Bay Resort in Clermont customers loud crack and the window say, had help before collapsing.

All facilities inside the building - said authorities estimated 35 people - the first was evacuated before the collapse of the structure.

APPENDIX 2

Translation Comprehension Evaluation and Survey

Please write what you think the following says in grammatically correct English with no spelling errors:

Please circle the numbers below corresponding with your answers: (1 = strongly disagree, 7 = strongly agree)

1.   I was interested in this task.

2.   I was motivated to understand the sentences.

3.   I know English very well.

4.   I have a large English vocabulary.

5.   I rarely make grammatical mistakes.

6.   I know a non-English language (e.g. Spanish, French, etc.) well.

7.   I know the subject matter of these sentences (i.e., Florida, sinkholes).

DOES GREATER EXPOSURE TO SERVICE LEARNING ENHANCE STUDENT OUTCOMES?

James E. Weber, St. Cloud State University
jweber@stcloudstate.edu

Paula S. Weber, St. Cloud State University
psweber@stcloudstate.edu

Margaret A. Young, Texas Woman's University
myoung13@twu.edu

ABSTRACT

Service learning has become an increasingly popular pedagogy on university campuses, partially due to pressure on colleges and universities to produce students who are strong community citizens. This occurs at a time when institutions of higher education find themselves increasingly pressed for resources and seeking ways of maximizing the impact of their expenditures. In their 2010 empirical study on impacts of service learning, Weber and Weber examined the impact of service learning on four variables appropriate to developing better citizens, an inherent aspect of service learning: Civic Participation, Self-Efficacy Toward Service, Attitude toward Helping Others, and the Role of College Education in Addressing Social Issues. They found a number of positive significant results for student service learning participation and made suggestions for future research, but were unable to conclude that taking a second or more service learning class had an impact on study variables. This study took a different approach to examining the impact of repeated exposures to service learning, proposing a specific pattern of results for various levels of service learning experience. Results suggest that there is a clear pattern of response levels on study variables to service learning, but that hypothesized differences in mean levels of those responses are not all significantly different. If it is true more generally that repeated exposures to service learning produce non-significant increases in student outcomes, universities should reexamine their strategies regarding the provision of service learning opportunities so as to maximize the results of their expenditure of scarce resources.

Keywords: Service Learning; Impact of Service Learning; Multiple Exposures to Service Learning

INTRODUCTION

Service learning has a long history on US college campuses, with roots stretching back to the 19th century (History of Service-Learning in Higher Education, 2008). By the late 20th century, service learning in education achieved a more formal status, as it was included as a goal in the National and Community Service Act of 1990, which was passed by the 101st Congress and signed by President George H.W. Bush. That act defined service learning as:

A method under which students or participants learn and develop through active participation in thoughtfully organized service that is conducted in and meets the needs of a community; is coordinated with an elementary school, secondary school, institution of higher education, or community service program, and with the community; and helps foster civic responsibility; and that is integrated into and enhances the academic curriculum of the students, or the educational components of the community service program in which the participants are enrolled; and provides structured time for the students or participants to reflect on the service experience. (National and Community Service Act of 1990, Sec. 101 [42 U.S.C. 12511] Definitions, 23, A-B)

Similar to other forms of student participation in campus activities (Lubbers & Joyce, 2014) service learning has a variety of benefits (Helm-Stevens, Fall, Havens, Garcia, & Polvi, 2014) including the effects of organizational outreach to the community and the economic impact of student labor in the community. It has grown rapidly and is becoming a widely adopted educational pedagogy (Helm-Stevens et al., 2014) with greater acceptance into mainstream activities at universities (Gerstenblatt & Gilbert, 2014). Campus Compact, an organization founded to support service learning, tracks service learning in their 1,120 member institutions, and their 2012 report indicates that 95% of their members offer an average of 66 service learning classes per campus (Campus Compact, 2013).

In fact, service learning has become so popular that in spite of the benefits, some researchers are beginning to question whether both campuses and communities possess the resources to continue the expansion (Littlepage, Gazley, & Bennett, 2012). As an example of the magnitude of resources expended on higher education's side, in 2012, 18% of campus Service Learning Centers had budgets exceeding $250,000 (Campus Compact, 2013), a significant expenditure at a time when colleges and universities' resources are stretched. The community supply-side is seldom examined (Helm-Stevens et al., 2014), but Littlepage et al. documented concerns that service learning participation at nonprofits required a greater involvement from managers than other volunteers, and in some cases managers suggested that their hesitance to expand service learning might be related to the time required to properly manage and provide high-quality educational experiences to service learners.

From higher education's perspectives, resources remain stretched even though the recession is over. In a white paper from the Center on Budget and Policy Priorities and based on data provided in 2015 by the State Higher Education Executive Officers Association, Mitchell and Leachman (2015) indicate that support for public higher education has still not returned to pre-recession levels, leaving colleges and universities to decrease educational or other services, raise tuition, or often to implement both options. As of 2015, state funding for higher education remained below pre-recession levels in all but three states, in some cases by more than 40%. For example, in the large Minnesota State Colleges and Universities 54-campus system, state appropriations, though rising in the last three years, suffered an overall decline from $670.2 million in 2008 (Fiscal Year 2014 Operating Budget, 2013) to $605.1 million in 2015 (Fiscal Year 2015 Operating Budget, 2014). Faculty and staff lines have been cut, programs eliminated, and costs are being examined more closely than ever. In other cases, entire campuses have been merged or discussions are ongoing regarding that possibility (Thomason, 2015; Walters, 2015). The result has been that in spite of improving conditions (Mitchell & Leachman, 2015) students now pay on the average, tuition amounting to 53% of the cost of their education (Higher Education: State Funding Trends and Policies on Affordability, 2014)

and colleges and universities may be forced to look at tuition increases to expand programs. As one of those programs that could be expanded, service learning and its outcomes appropriately bear examination.

For all its recent popularity, research on service learning seems to have a number of limitations. As early as 2004, Wittmer noted that there was little empirical data examining the impact of service learning on students. Weber and Weber (2010), and Newman and Hernandez (2011) agreed, identifying several gaps and methodological failings common to service learning studies, and in 2011 Seider, Gillmor and Rabinowicz argued that the bulk of academic literature on service learning was qualitative and descriptive rather than empirical. Authors seem to be identifying a perceived lack of quantitative studies to complement the qualitative studies prevalent in the literature. Given the great number of variables potentially involved in the study of service learning (variations in types of service learning, length, degree on incorporation into class work, community, student engagement, environmental support, the great number of student outcomes, organizational outcomes, community outcomes, etc.) one could reasonably expect to see hundreds of papers, if the research on service learning was mature.

This perspective is supported by the small number of studies cited in two available meta-analyses on service learning. Conway, Amel, and Gerwien (2009) were able to find 103 quantitative analyses of service learning suitable for inclusion in their meta-analysis, while in a meta-analysis published three years later, Yorio and Ye (2012) included 40 studies. Conway et al. used an inclusive definition for service learning, while the Yorio and Ye study employed criteria for inclusion more strictly defining service learning. Seventeen of Conway et al's studies were included in Yorio and Ye, along with 23 studies not included in the earlier meta-analysis. In total, 126 unique quantitative studies were used in the two meta-analyses. The Conway et al. study, the more comprehensive of the two, found that changes in students for academic outcomes were moderate, changes for personal and citizenship outcomes were small, and changes for social outcomes were in between. The Yorio and Ye study found positive effects on student understanding of social issues, personal insight, and cognitive development. Of course the meta-analyses don't focus on all of the possible outcomes for service learning, which also include service learning's impact on universities and the communities where the service occurs.

Given the large number of potential service learning related areas to study and the relatively small number of quantitative studies available, there are understandably a number of gaps in the literature. One of those gaps is the effect on students of multiple exposures to service learning. The question arises as budgets for service learning centers and projects climb on campus while overall campus budgets fall. In an environment featuring fewer resources for higher education, the question of whether a single exposure to service learning is sufficient or whether multiple exposures are necessary to produce desired results in students becomes more and more relevant. If multiple exposures are necessary, the impact on the cost of providing those service learning experiences is evident.

The 2010 Weber and Weber study attempted to address the issue of multiple exposures to service learning and their impact as a secondary issue. That study was embedded in a stream of research that developed scales measuring constructs intended to be relevant to the civic engagement portion of intended service learning outcomes (Sleeper, Schneider, Weber, & Weber, 2006; Weber, Weber, & Craven, 2008; Weber, Weber, Schneider, & Sleeper, 2007) establish reliability and

validity of those scales (Weber, Weber, & Young, 2010), then use those scales to examine the impact on these constructs in students exposed to service learning (Weber, Schneider, & Weber, 2008; Weber, Schneider, & Weber, 2011). The constructs developed and studied included Civic Participation (CP), Self-Efficacy Toward Service (SETS), and College Education's Role in addressing Social Issues (CERSI), and they were used along with a more general scale, Attitude toward Helping Others (AHO) developed and validated by Webb, Green, and Brashear (2000).

The 2010 study employed a quasi-experimental pre-test, post-test with a control group nonequivalent group design. It was a real-world study of 676 students enrolled in 27 courses and 38 majors across the campus of a mid-sized Midwestern comprehensive university. Because students enrolled in classes of their own volition instead of being randomly assigned to classes (creating nonequivalent groups), special care was taken in the analysis to deal with the issue of potential self-selection into service learning sections of classes. The primary analytical technique employed was a Multivariate Analysis of Covariance (MANCOVA) as suggested by Reichardt (1979) for the analysis of non-equivalent group designs of this nature. In this procedure, post-test scores on CP, SETS, CERSI and AHO were entered as dependent variables; the fixed factor was treatment versus control group, and pre-test scores on CP, SETS, CERSI and AHO were entered as covariates to statistically remove the impact of preexisting attitudes (that might lead to selection bias) from the analysis. That analysis showed a significant impact of service learning on all three constructs specifically designed to be relevant to service learning, although the effect sizes were small for these personal and civic participation variables, consistent with the Conway, et al. meta-analysis.

More germane to this paper is Weber and Weber's attempt to examine the impact of multiple exposures to service learning. Their analysis was limited to a comparison of only 304 students currently enrolled in service learning classes, looking to see if having multiple exposures to service learning produced incremental impacts on the four variables studied. Though they failed to find differences between single and multiple exposures to service learning, studying only students currently enrolled in service learning classes limited the sample size analyzed.

Perhaps a better way of looking at the problem would have capitalized on their findings that even controlling for preexisting attitudes, taking a service learning class produced a significant impact on student attitudes. If it is known that a service learning exposure produces an impact, it might be possible to conceptualize the issue of impact differently. Suppose we examine a sample of students. Is it possible to predict the pattern of magnitudes of their levels of CP, SETS, CERSI & AHO based on the total amount of experience in service learning classes and how recently that has occurred? This reconceptualization has the benefits of increasing the power of the analysis by increasing the number of subjects in the sample as well as maximizing the variance in the dependent variables by also including subjects who have not taken a service learning class. An approach of this nature gives a researcher a better chance of finding true significant differences if they exist.

This study should be regarded as an extension of the Weber and Weber (2010) paper that uses the same variables, but a significantly larger sample to examine the question of exposure to multiple levels of service learning in a different way. The available dataset allows us to determine if a student is currently enrolled in a service learning class and if they have had service learning classes

previously. Thus we have four conditions: those who are currently enrolled in a service learning class and have previously had a service learning (SL) class (designated Group 1), those who have had a service learning class previously but are not currently enrolled in one (designated Group 2), those who are currently enrolled in a service learning class and have not had one previously (designated Group 3), and those who have had no exposure to service learning (designated Group 4). Summarizing:

Group 1 – Currently taking a SL class and having prior experience with SL.
Group 2 – Not currently taking a SL class but having prior experience with SL.
Group 3 – Currently taking a SL class but not having prior experience with SL.
Group 4 – Not currently taking a SL class and not having prior experience with SL.

Since we know that service learning has an impact, we could hypothesize that more exposure to service learning produces a greater impact. That would be the first condition above, students who have previously taken a service learning class and are currently enrolled in one. This leads to Hypothesis 1.

H1. Group 1 will exhibit the highest level of responses on CP, SETS, CERSI, and AHO.

In the 2010 paper, Weber and Weber speculated that because of the reflective nature of service learning, it is possible that the impact of service nature is not immediate, and in fact the impact may increase over time, consistent with the types of long term impact found by Newman and Hernandez (2011). In the current study, in order to provide an adequate group size, all students having taken at least one service learning class but not currently enrolled in one were treated as a single group. Within this group, there are some who have previously been enrolled in more than one service learning class, but all would have had the opportunity to reflect on their experience. For those two reasons, the second hypothesis states:

H2. Group 2 will exhibit the next-highest levels of CP, SETS, CERSI and AHO scoring below Group 1 and higher than the remaining students.

We know that service learning has an impact on the variables studied, so the third hypothesis states:

H3. Group 3 will exhibit the next-highest levels of CP, SETS, AHO & CERSI, scoring lower than Groups 1 & 2 on those variables and higher than the remaining students.

Finally, the remaining hypothesis states:

H4. Group 4 will exhibit the lowest levels of CP, SETS, AHO & CERSI.

METHOD

This study uses the dataset of the 2010 Weber and Weber study, but approaches the analysis of the issue of the impact of multiple exposures to service learning differently, allowing the examination of a 62% larger sample with greater total variance. It proposes that if we examine a sample of students, knowing that an exposure to service learning has an impact on the study variables and the reflective nature of service learning may increase results over time, we can predict that order of levels of study variables based on the currency and amount of exposure to service learning.

Since the university did not require the use of service learning in all sections of classes in these relatively early days of service learning adoption, some sections of classes implemented service learning while others did not. Students were administered a pre-test survey on the first day of class, before their professor revealed anything about the class. The survey included items comprising the CP, SETS, CERSI and AHO scales, demographic items, and items allowing the matching of post-class surveys. Students were assured that their responses were confidential and would not be revealed to their professors. In the last week of classes students were administered a post-test survey consisting of the same scales plus the items allowing matching with pre-test surveys.

Sample

A pre-class (first class period before the instructor had covered the syllabus), pre-test survey was administered to 676 students enrolled in 27 sections of classes, including 16 sections engaged in service learning and 11 sections of the same courses where students were not engaged in service learning. A wide variety of majors were included, ranging from Business to Education and comprising 38 majors. During the final week of classes, a post-test survey was administered and researchers were able to match 493 post-surveys with pre-surveys. Missing data on one response brought the sample size down to 492 for the following analysis. Subjects were 40% male, with a mean age = 21.37 years (SD = 4.7 years, Median = 20.0 years). Table 1, below, shows how the sample was broken down in terms of amount and currency of exposure to service learning, along with sample sizes for the different categories.

Table 1. Sample Sizes and Classification of Groups 1-4.

	N	Prior Experience with SL	Currently Taking a SL Class
Group 1	106	Yes	Yes
Group 2	56	Yes	No
Group 3	198	No	Yes
Group 4	132	No	No

Analysis

The analysis was conducted utilizing SPSS's GLM, simulating a Multivariate Analysis Of Variance (MANOVA). Group (experience and currency of experience with SL) was the fixed factor and post-test, end-of-semester scores on CP, SETS, CERSI and AHO were entered as dependent variables. The overall, multivariate F-test Group was significant ($F_{4, 485} = 6725.5$, p = .000 for Pillai's, Wilks', Hotelling's and Roy's tests), so interpretation of between-subjects effects was appropriate.

Results

The results of between-subjects tests are shown below in Table 2. The sample sizes were large enough to achieve reasonable power for tests, with all observed power values above .99. F-values were very highly significant for all four dependent variables, though effect sizes were modest, ranging from 4.8% of variance explained for Self-Efficacy Toward Service and College Education's Role in addressing Social Issues, to 5.1% for the more general AHO, and to 6.7% Civic Participation.

Table 2. Estimated Marginal Means, Significance Levels and Effect Sizes for DVs.

Dependent Variable	Estimated Marginal Means	Std. Error	F-Value	Sig. Level	Partial eta^2	Observed Power
Civic Participation (CP)	Group 1 = 24.82	.312	11.671	.000	.067	1.000
	Group 2 = 24.70	.429				
	Group 3 = 24.43	.228				
	Group 4 = 22.68	.280				
Self-Efficacy Toward Service (SETS)	Group 1 = 21.26	.270	8.160	.000	.048	.992
	Group 2 = 20.84	.371				
	Group 3 = 20.65	.197				
	Group 4 = 19.56	.242				
College Education's Role in addressing Social Issues (CERSI)	Group 1 = 23.94	.378	8.223	.000	.048	.992
	Group 2 = 23.36	.520				
	Group 3 = 23.18	.277				
	Group 4 = 21.57	.339				
Attitude toward Helping Others (AHO)	Group 1 = 16.75	.245	8.798	.000	.051	.995
	Group 2 = 16.41	.337				
	Group 3 = 15.97	.179				
	Group 4 = 15.13	.220				

Table 3 shows both the estimated marginal means for all four dependent variables and the 95% confidence intervals that can be used to evaluate whether the groups are significantly different. Hypotheses 1-4 proposed a pattern of means for the groups on each of the dependent variables that, taken together would have means ordered from high to low, Group 1, 2, 3, then 4. An

examination of Table 3 shows that the proposed pattern holds true for all four dependent variables. Further examination shows that the differences predicted in H1-H4 are not all significant.

Table 3. Estimated Marginal Means and 95% Confidence Intervals for Dependent Variables.

Dependent Variable	Estimated Marginal Means	95% Confidence Interval	
		Lower Bound	Upper Bound
Civic Participation (CP)	Group 1 = 24.82	24.207	25.434
	Group 2 = 24.70	23.853	25.540
	Group 3 = 24.43	23.981	24.878
	Group 4 = 22.68	22.132	23.231
Self-Efficacy Toward Service (SETS)	Group 1 = 21.26	20.734	21.794
	Group 2 = 20.84	20.110	21.569
	Group 3 = 20.65	20.258	21.034
	Group 4 = 19.56	19.085	20.036
College Education's Role in addressing Social Issues (CERSI)	Group 1 = 23.94	23.201	24.686
	Group 2 = 23.36	22.335	24.379
	Group 3 = 23.18	22.638	23.725
	Group 4 = 21.57	20.910	22.241
Attitude toward Helping Others (AHO)	Group 1 = 16.75	16.264	17.227
	Group 2 = 16.41	15.748	17.073
	Group 3 = 15.97	15.612	16.317
	Group 4 = 15.13	14.697	15.560

The interpretation of results for all four dependent variables is similar. Although the means are patterned as hypothesized, Groups 1, 2, & 3 are significantly different from Group 4, but not from each other. In essence, students with any experience with service learning scored significantly higher than students with no experience, but there were no significant differences between groups based on multiple exposures to service learning. Thus H1-H3 received partial support (the pattern of means is as predicted but the differences not significant) and H4 is supported (those with no exposure to service learning scored significantly lower on all 4 dependent variables).

DISCUSSION

While the popularity of service learning has never been higher, the widespread use of this relatively expensive pedagogy comes at a time when colleges and universities find themselves financially stretched and having difficulty meeting all their various commitments. At the same time, questions are being raised about the sustainability of the commitment to service learning from both the educational and community perspectives. In that environment, additional information or analysis that sheds light on the effectiveness of service learning is welcome. This study focused on only a small part of service learning's possible outcomes: what Conway et al. (2009) would call personal and citizenship outcomes. Civic Participation (CP), Self-Efficacy Toward Service (SETS), College Education's Role in addressing Social Issues (CERSI) and Attitude toward Helping Others are important variables, but they are not the only variables that should be studied. The meta-analysis found personal and citizenship outcomes to be relatively small and that finding is echoed in this study. In general, a generous interpretation of the current study also might be seen as supporting the view that increased exposure to service learning enhances these small personal and citizenship outcomes, but that the impact is small enough that it is not statistically significant. A less-generous interpretation might ignore the pattern of outcomes that is repeated and consistent across all for variables, but not significant.

If repeated exposures to service learning do not produce worthwhile incremental gains, one has to question whether the money and effort spent in providing those additional exposures has been well spent. A better strategy for these resources might be to expose more students once rather than a smaller number of students multiple times, or even to reallocate the resources entirely. Institutions of higher education are not wanting for alternative applications of time, effort and money currently allocated to service learning.

Study Limitations

The current study, though of adequate size, is taken from only a single, mid-sized, Midwestern comprehensive university. It cannot be considered representative without replication. In addition, this study didn't exhaustively study all possible outcomes of service learning. In examining CP, SETS, CERSI and AHO, this study focused on personal and citizenship outcomes of the students exposed to service learning. It is possible that these low-impact outcomes are unique in not showing additional impact upon repeated exposures to service learning. It is also possible that multiple exposures to service learning produce incremental impacts within the university and community that completely justify the cost, time and effort expended. Overall, this study examines only a subset of the variables subject to change from repeated exposures to service learning, and eventual conclusions about the overall efficacy of service learning must necessarily come from further study that includes additional variables representing other types of impact. Finally, not all service learning experiences are equal. This study doesn't discriminate between service learning type, skills used, and depth of student involvement in its analysis. Ideally, replication of this study would match the characteristics of the sites examined in this study, include the extensions discussed above and would be complemented by qualitative research designed to flesh out and explain the findings presented here.

CONCLUSION

In a time of diminished resources, it is important to examine university efforts that are time and money intensive in an attempt to maximize the impact of those activities. This study showed no significant incremental impact on the students' personal and citizenship attitudes studied. Those results raise the question of whether repeated exposures to service learning are justified if they show only relatively small returns for repeated time and monetary investments. Though the study examines only a small portion of possible service learning outcomes, it points to a need to examine more closely service learning practices and outcomes in other areas, especially whether the impact of repeated exposures of student to service learning has impacts that justify the investment, regardless of whether the impacts are on the student, the university and its relationships or on the community. As such this study is a valuable contribution to what should be a broader investigation of the possible impacts of multiple exposures to service learning. If additional research shows impacts on other outcomes similar to those shown in this study, universities can save considerable time, money and faculty resources by targeting exposures more carefully in a way that exposes the maximum number of students the minimum amount to produce desired outcomes. In a time when higher education is stressed for resources, this is a timely and important question.

REFERENCES

Campus Compact. (2013). *Creating a Culture of Assessment: 2012 Campus Compact Annual member Survey*. Boston, MA: Campus Compact.

Conway, J. M., Amel, E. L., & Gerwien, D. P. (2009). Teaching and learning in the social context: A meta-analysis of service learning's effects on Academic, personal, social, and citizenship outcomes. *Teaching of Psychology*, *36*(4), 233-245.

Fiscal Year 2014 Operation Budget. (2013). *Minnesota State Colleges and Universities*. Retrieved from http://www.finance.mnscu.edu/budgets/docs/FY2014_Operating_Budget.pdf

Fiscal Year 2015 Operation Budget (2014). *Minnesota State Colleges and Universities*. Retrieved from http://www.finance.mnscu.edu/budget/operating/docs/FY2016/FY2016_operating_budget_with_attachments_Final.pdf

Gerstenblatt, P., & Gilbert, D. (2014). Framing service learning in social work: an Interdisciplinary elective course embedded within a university-community partnership. *Social Work Education*, *33*(8), 1037-1053.

Helm-Stevens, R., Fall, R., Havens, C., Garcia, M., & Polvi, L. (2014). The impact of service-learning curriculum at a local at-risk high school: An examination of preliminary data. *American Journal of Economics and Business Administration*, *6*(3), 122-132.

Higher Education: State Funding Trends and Policies on Affordability. (2014). *GAO-15-151*. Washington, D.C.

History of Service-Learning in Higher Education. (2008). *Learn and Serve Clearinghouse*. Retrieved from http://education.ufl.edu/learnandserve/resources/resource%20files/History_of_SL_in_HE_FINAL_May08.pdf

Littlepage, L., Gazley, B., & Bennett, T. A. (2012). Service Learning from the supply side: Community capacity to engage students. *Nonprofit Management & Leadership*, *22*(3), 305-320.

Lubbers, C. A. & Joyce, T. A. (2014). Promoting campus activities: Encouraging student participation. *Quarterly Review of Business Disciplines*, *1*(1), 1-14.

Mitchell, M., & Leachman, M. (2015). Years of cuts threaten to put college out of reach for more students. *Center on Budget and Policy Priorities*. Retrieved from http://www.cbpp.org/research/state-budget-and-tax/years-of-cuts-threaten-to-put-college-out-of-reach-for-more-students

National and Community Service Act of 1990. (1990). 42 USCA 12501 et seq.

Newman, C. M., & Hernandez, S. A. (2011). Minding our business: Longitudinal effects of a service-learning experience on alumni. *Journal of College Teaching and Learning*, *8*(8), 39-48.

Reichardt, C. S. ((1979). The statistical analysis of data from nonequivalent group designs. In T.D. Cook & D. T. Campbell (Eds.), *Quasi-Experimentation: Design and Analysis for Field Settings*, (147-205). Boston: Houghton-Mifflin.

Seider, S., Gillmor, S., & Rabinowicz, S. (2011). The impact of community service learning upon the worldviews of business majors versus non-business majors at an American university. *Journal of Business Ethics*, *98*(3), 458–503.

Sleeper, B. J., Schneider, K., Weber, P. S. & Weber, J. E. (2006). Scale and study of student attitudes toward business education's role in addressing social issues. *Journal of Business Ethics, 68*(4), 381-391.

Thomason, A. (2015). Just like that, 12 campuses in Georgia become 6. *The Chronicle of Higher Education*. Retrieved from http://chronicle.com/article/Just-Like-That-12-Campuses-in/151053.

Walters, S. (2015). Steven Walters: Wisconsin legislators quietly consider realigning colleges, universities. Retrieved from http://www.gazettextra.com/20150810/steven_walters_wisconsin_legislators_quietly_consider_realigning_colleges_universities

Webb, D. J., Green, C. L., & Brashear, T. G. (2000). Development and validation of scales to measure attitudes influencing monetary donations to charitable organizations. *Journal of the Academy of Marketing Science*, *28*(2), 299-309.

Weber, J. E., & Weber, P. S. (2010). Service learning: An empirical analysis of the impact of service learning on civic mindedness. *Journal of Business, Society and Government, 2*(2), 79-94.

Weber, J. E., Weber, P. S., & Craven, B. L. (2008). Measuring students' attitudes toward college education's role in addressing social issues. *Psychological Reports, 102*, 791-796.

Weber, J. E., Weber, P. S., Schneider, K., & Sleeper, B. J. (2007). Preparing students for citizenship: An exploration of the antecedents and outcomes of self-efficacy toward service. *Journal of Business Inquiry*, *6*(1), 3-10.

Weber, J. E., Weber, P. S., & Young, M. (2010). Measuring service learning outcomes: Test-Retest reliability of four scales. *Psychological Reports, 107*(2), 611-616.

Weber, P. S., Schneider, K. R., & Weber, J. E. (2008). Choosing to serve? An exploration of student self-selection of service learning projects. *Mid-Western Educational Researcher, 21*(2), 30-35.

Weber, P. S., Schneider, K. R., & Weber, J. E. (2011). Service learning: Does it change student perspectives? *Business Research Yearbook, 18*(1), 313-317.

Wittmer, D. (2004). Business and community: Integrating service learning in graduate businesseducation. *Journal of Business Ethics*, *51*(4), 359–371.

Yorio, P. L., & Ye, F. (2012). A meta-analysis on the effects of service-learning on the social, personal, and cognitive outcomes of learning. *Academy of Management Learning & Education*, *11*(1), 9-27.

WHAT ARE THE FACTORS AFFECTING PRICE PERCEPTION?
THE CASE OF GUATEMALA

John E. Spillan, University of North Carolina - Pembroke
john.spillan@uncp.edu

Talha Harcar, Penn State University - Beaver
tdh13@psu.edu

Nicholas Virzi, School of Government Universidad Internaciones
nicholasvirzi@gmail.com

ABSTRACT

Price perception is an important issue in consumer decision-making because it directly affects the buying process. Several studies have established the importance of this factor when consumers think about purchasing a product or service. Price is related to customer response behavior and emotion. Some behaviors such as dissatisfaction, anger, and outrage have been identified as some of the customer reactions to pricing of products and services. The issue of price in marketing, selling and shopping is at the core of customer desire for products and services. The marketing mix (product, price, place and promotion) presents the foundation for strategic marketing. The findings in this study provide some understanding of how price perceptions are formed (Grönroos, 1994; Subhash, 1989). It provides the evidence to develop a framework for the formation of price perception based on a review of the literature and an analysis of the empirical data. As such, we are able to develop an understanding of the factors affecting price perception formation in a developing country, Guatemala. This knowledge has not previously been synthesized.

Keywords: price perception, consumer behavior, Guatemala, shopping

INTRODUCTION

Price perception is a fundamental factor in consumer decision-making in the buying process. Several studies have established the importance of this factor when consumers think about purchasing a product or service (Kalapurakal, Dickson & Urbany, 1991; Maxwell, 2002; Simmons & Weiserbs , 1992). Price is related to customer response behavior and emotion. Some behaviors such as dissatisfaction, anger, and outrage have been identified as some of the customer reactions to pricing of products and services (Xia, Monroe, & Cox, 2004). The issue of price in marketing, selling and shopping is at the core of customer desire for products and services. Research has long established that the marketing mix (product, price, place and promotion) presents the foundation for strategic marketing. Almost all of these mix components form the base for developing an effective marketing strategy. Depending on the market segment, the manner in which one or more of these marketing mix components are managed can make or break a marketing strategy (Grönroos, 1994; Subhash, 1989). In the case of WalMart we find that price is the bottom line cue that motivates shoppers to patronize the thousands of outlets located throughout the world. Their

slogan of "everyday low prices" attracts multitudes seven days per week. Price is a major factor bringing the people into the stores. Customers can express their interest in price by being value conscious by associating price with the value of the product or service. This relationship of price and value seems to be ubiquitous among most market segments (Biswas & Blair, 1991, Moore & Carpenter, 2008). While this is a sensitive area because value and quality seem to be synonymous, consumers periodically purchase products and services using coupons and take advantage of sales. Both of these price-reducing mechanisms have a long history of popularity in just about every market segment. In most cases, consumers exhibit several central reactions to just about any issue related to price. These responses can be guided by price consciousness, value consciousness, price expertise, price sensitivity, and those external factors such as price coupons and sales, which have an impact on price (Kurtulus & Okumus, 2010). The understanding of price perceptions provides marketing managers with important cues for strategically aligning his/her marketing mix to meet the needs of consumers (Kurtulus & Okumus, 2010).

The literature and actual observations clearly indicate that the price is a very important factor affecting consumption and consumer purchases (Meng, Nasco, & Clark, 2008; Nasco & Clark, 2008). While there is ample evidence to suggest that price alone is not the only factor affecting the purchasing decision, there is limited data that suggest how different constructs affect consumer-buying behavior. It is evident that variables such as brand name and country of origin can also effect the consumer's price perception (Meng, et al., 2008). As such, price perception is a multidimensional concept that determines the consumer's desire and willingness to purchase a product or service. While price is an important factor in the purchase decision, its importance varies depending on the purchasing context (Meng, et al., 2008). The context or background situation will have a major impact on how intense the relationship of price is to the purchasing decision. There is substantial evidence indicating that people make purchasing decisions based not only on the price but the price and other elements. The consumer compares market prices and judges the attractiveness of the price relative to the value and other attributes of the product (Meng, et al., 2008).

The purpose of this paper is to investigate two perspectives on price perception: the negative role of price and the positive role of price. These roles become dominant in persuading consumers in the buying process. With regard to the negative role, there are essentially five constructs that are used to evaluate this role. These constructs include value consciousness, price consciousness, coupon proneness, sale proneness and price mavenism. On the positive side the constructs comprise price quality schema and prestige sensitivity (Lichtenstein, Ridgway, & Netemeyer, 1993). This study makes a contribution to the literature because it takes a major price perception construct and applies it to a lesser-developed country, Guatemala, located in Central America.

Essentially, the authors' aim in this study is to answer three basic questions:

a. Does the framework influence overall price perception and consumer decision-making?
b. Is price perception, in fact, a multi-dimensional construct that needs consideration of several variables to provide solid consumer decision-making insight?
c. Can the price perception construct be utilized to analyze price perception across cultures among consumers in Guatemala?

Few studies on this topic have crossed cultures and thus this research begins to close a major gap that now exists in the price perception literature.

This paper is organized into five sections. The first two sections contain the introduction and literature review and development of research hypotheses and research model that provide the overview of the conceptual framework for the study of the price perception typologies. Section three includes price perception in developing countries and Guatemalan socioeconomic context Sections four and five contain the research design methodology, data analysis and findings. The final section provides the conclusions reached from the study as well research limitations.

PRICE PERCEPTION CONSTRUCTS: LITERATURE REVIEW, DEVELOPMENT OF RESEARCH HYPOTHESES, AND RESEARCH MODEL

Pricing is a marketing mix factor that needs to be strategically aligned with the consumer needs and desires. A firm's profitability is directly linked to the proper management of the pricing strategy. The more marketers know about a consumer's reaction to price issues, the better it will be for making pricing decisions. Since the issue of price affects the consumer's willingness and ability to purchase products and services, it becomes an important element to understand and manage. Price is a dynamic concept with relationships to many positive and negative attributes (Mendoza & Baines, 2012). Lichtenstein et al.'s, (1993) price perception scale provides a framework for a more thorough explanation of the pricing elements that affect a consumer's willingness and desire to buy goods and services. The formation of a pricing perception is affected by the seven constructs discussed in the introduction section of this article. A brief overview of each of these constructs will give the reader a better context for understanding their relevance to the price perception idea.

The first construct on the negative side of the discussion is the "Value Consciousness" factor. This concept essentially says that consumers are concerned with the relationship of prices being offered and the value of quality that they equate with the price (Lichtenstein et al., 1993). There are two basic ways a consumer perceives quality:

    a.) When a consumer sees a new product he/she will consider the salient attributes and form an opinion;
    b.) There are extrinsic cues that may influence consumer evaluation of products and services.

It is important to know how consumers in Guatemala form their evaluation of quality of goods. A consumer's perception of value is developed from an array of cues. Value of a good is related to attributes in that good but also the psychological outcome people have for it (Chowdhury & Abe, 2006). There is a relationship between expected positive and negative utility of perceived value (Willetts & Kemp, 1995). In Latin America, Nielsen's Global Private Label Report (2011) revealed that private label shares ranged from 1 to 12% of the market. Of the six countries measured the researchers found that four of them had a solid growth trend with private labels. Mexico showed the greatest growth while Brazil and Venezuela were modest during the 2008-2010 periods (Nielsen Global Private Label Report , 2011). Sixty-two (62%) of Latin American consumers indicated that they purchased private label. Ninety percent said they would continue to buy private label. Thus we can state that:

H1: Value consciousness is related to price quality schema

The second construct is "Price Consciousness." Price is an important part of the pricing mix in developing countries. With this factor it is believed that the consumer has a linear relation with price where their goal is to pay low prices (Lichtenstein et al., 1993). Perception of international price differences need not be based on reality. Price differences in international markets may simply arise from nominal currency differences. Confusion of the nominal vs. real values of money may affect price perceptions. Additionally, foreign prices might appear more expensive because foreigners might not know the best place to shop for cheaper brands of goods. As such, foreign prices seem higher (Willetts & Kemp, 1995). Consumer price knowledge varies across the globe (Aalto-Setälä, Evanschitzky, Kenning, & Vogel, 2006). In many countries pricing strategies are designed to exploit human psychology. Retail prices are set high so discounts can be offered - as such consumers they have gotten a bargain. How retailers market themselves on cost and value for money in different cultures provides some interesting insights into consumer's perception of price in various markets around the world (Ger & Belk, 1996). As such we can posit that:

H2: Price consciousness is related to price quality schema.

The third element "Coupon Proneness" refers to how the seller presents the price cue. Some consumers view the coupon prices differently than a non-coupon lower price. While both approaches achieve essentially the same goal (lower prices) the method for presenting to the consumer provokes a different sensitivity for the regular consumer (Lichtenstein et al., 1993). Coupons continue to be a very important part of the traditional retail and online consumer shopping experience. They become an important mechanism for movement of products and goods for both manufacturers and retailers. One of the key variables that exists in any promotional technique is framing and timing. If the seller (retailer or manufacturer) does not get these two items correct then the consumer will be lost (Chatterjee, 2007; Oliver & Shor, 2003). Since coupons offer several benefits to both the seller and the consumer, it is important that their offerings and acceptance are coordinated properly. For the retailers, coupon offerings not only attract consumers because they reduce the price of goods but they also provide a vehicle for speeding up the product/service purchase cycle, increase the inclusion of multiple purchases, and migrate consumers to other shopping channels (Oliver & Shor, 2003). For the consumer, the coupons offer a reduced price not only on the first purchase but also for some in-pack or on-pack coupons, an opportunity for reduced price on the next purchase they may make. This is a huge incentive and has a major impact on the price perception of any good or service that is offered.

In the present digital age, the existence of coupons is as important as is the traditional retail store. Barnes and Noble and Amazon have integrated coupons into their offerings also. While the digital approach is not universally accepted by all consumers (those who do not have computers), digital retail consumption has been very active over the most recent years. One of the factors that has made digital retailing attractive is not only the convenience but also the coupon offerings or the special promotions that the digital retailers have provided the consumers. These coupons are presented in the form of digital button submissions or require a special code that can be gotten on line. All of these are part of the process of making prices and products more readily accessible to consumers. Moreover, they offer, in many cases, better and fairer perceptions of products and prices (Chatterjee, 2007). Therefore we can say that:

H3: Coupon proneness is negatively related to price consciousness.

The fourth component "Sales Proneness" has a similar effect to that of a coupon but the signal is presented in a different form. The prompt relates to how sensitive they are to the price associated with the "sale" as opposed to the price being reduced because of a coupon. Between the two constructs the way price is presented and how the method of presentation affect the consumer sensitivity seems to be the operating principle here (Lichtenstein et al., 1993). Consumer promotion is directly related to the price of a product. The types of promotion include coupons, sales discounts, premiums, and free samples. These promotion ideas affect consumers' price perception. While rebates, coupons, and price cuts all provide consumers with monetary savings, the means of savings vary. Primary motivation for these rebates etc. is to stimulate a purchase of the product or service (Folkes & Wheat, 1995). A comparative research results in a university in Beijing, China and in a large southern university in the USA shows that Chinese young consumers are less coupon prone than US college students (Zhou & Nakamoto, 2011). Consumers may think twice about the reduced prices and contemplate the value. Comparing the reduced price and the real value of the product has an impact on the consumers' price perception. Consumers generally compare and contrast the promotion price with the actual price. Such things as a small saving may have a lower perception of the price issue altogether. The type of promotion i.e. coupons or rebates may be viewed differently and have a different effect on price perception (Folkes & Wheat, 1995). As such we can posit that:

H4: Sales proneness is negatively related to price consciousness.

Price perceptions are influenced by the desire of consumers to be informed about the prices of products. These consumers want this price information so that they can transfer it to other consumers. Such price sensitivity can affect not only the perception of prices but also the places that the information sharing consumer perceives to be the best to shop for the perceived prices that are offered (Gecti, 2014). As such, we can state that the fifth construct "Price Mavenism" means how consumers' gather price information and disseminate it among the general population in their domain (Lichtenstein, et al., 1993). It focuses on getting out the price information about products and services. Some consumers are very good at investigating frequently and accurately product prices in order to seek out the best buys at the lowest price. They search, every day in just about every buying situation, for information about product and pricing fairness and consumer satisfaction. In order to successfully complete this important task of "data gathering," the consumer must be in a particular socio economic class, have previous experience in this activity, and engage in a protracted learning process. Rational thinking and emotional motives influence a consumers desire to participate in this effort (Kurtulus & Okumus, 2010). Sharing price information with other potential consumers is essentially the foundation of this construct. As such we believe that:

H5: Value consciousness is related to price mavenism.

While these five constructs present waypoints for beginning the explanations and understanding of price perception, there is no definite understanding of the aforementioned constructs. According to Zeithaml's work (1988) price, value, and quality are not distinct and can be mistaken for their real meaning. Quality value is not well differentiated and there is some ambiguity that needs to be

defined and explained when applying these constructs to actual market situations. J.C. Penny for example, has found that sales and coupons provoke consumes to spend more when they are offered. They say that having a sales price next to the original price gives the consumer an anchor or point of reference for making their purchase decision (The Daily Circuit, 2013).

On the positive side of price perception, scholars have presented two major constructs: price quality schema and prestige sensitivity. According to this idea, some consumers see the price as a positive artifact in that the higher price means quality, better workmanship, etc. The higher price becomes a positive cue which consumers are sensitive to when evaluating the elements of the buying decision. The consumers who view this construct positively are willing to pay higher prices because they actually believe they are going to get higher quality with more expenditure of money (Lichtenstein et al, 1993).

Prestige sensitivity can be defined as the perceptions of the price cue due to inferences about what it signals to other people regarding the purchaser (McGowan & Sternquist, 1998). Thorstein Veblen introduced the notion of conspicuous consumption, or the extent to which the demand for goods is increased because they bear a higher rather than lower price (Leibenstein, 1950). Prestige sensitivity can be viewed as the propensity to make attributions about other consumers, or to be sensitive to attributions made by other consumers, on the basis of the price level of the purchase (Calder & Burnkrant, 1977). It has been suggested that prestige sensitivity is related to socially visible behaviors, where as a price/quality schema is influenced by cues that reinforce the validity of using price to imply quality. Rice (1992, p. 59) states, "As price conscious as consumers have become, they are still willing to pay more for products in which they have an ego investment." (Aaker, Fuse, & Reynolds, 1982) also found that Japanese consumers are more concerned with brand names than are Americans, even if required to pay more for them. Chinese young consumers are found to be more prestige sensitive than their US counterparts (Zhou & Nakamoto, 2011). As previously stated, when high price is viewed positively, it is believed to signal quality or status. It appears that there are those who view price in a positive way, using high price as a proxy for quality and an indication of prestige, thus representing market universal behaviors. Therefore we can say that:

H6: Price quality schema is related to prestige sensitivity.

These constructs are so defined that their understanding can provide information useful for making pricing strategy decisions. To test the model fit for the theory of online buyer behavior (see Figure 1), the following hypotheses are advanced:

Figure 1. Conceptual Model of Price Perception
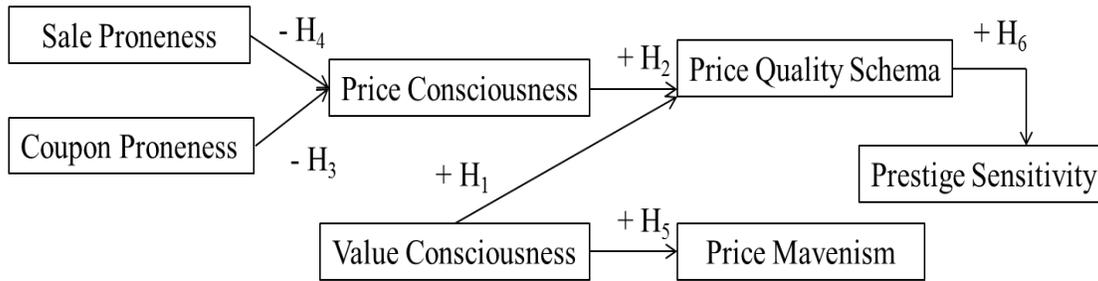
With this theoretical framework in mind we can overview the developing country context within which the pricing perception operates.

PRICE PERCEPTION IN DEVELOPING COUNTRIES

In emerging markets, marketing strategy focuses on several factors, price being one of the most important. While there is a lot of information available on how to formulate and execute appropriate strategies in the developed countries, limited understanding is available to guide marketers in implementing different types of strategies that would be effective in developing countries. Since price is a critical piece of the marketing mix, and the marketing mix is the foundation upon which marketing strategies are built, it behooves marketers to know the price perceptions among consumers in developing countries (Anderson & Markides, 2007). While scholarly work regarding price perception is not at all new, it is a new area of research when investigating emerging or developing countries. The existing literature on price perception in developing countries is scant at best.

Guatemala provides an excellent example of a country that has a vibrant market economy with lots of product price issues among its consuming population. According to The Central Intelligence Agency (2014), Guatemala is slightly smaller than Tennessee (108,889 sq. km/42,042 sq. mi), tropical, has an estimated population of 14,361,666, is 49% urban, with a GDP of $39 billion, 332 km/200 mi of railroads, and 4,863 km/2,872 mi of paved roads. The United Sates is much larger in area (9,161,666 sq. km/3,794,083 sq. mi), with a varied climate, has a population of approximately 307.2 million, is 82% urban, a GDP of US$ 14,800 billion2, 226,427 km/140,699 mi of railroads, and 4,209,835 km/2,615,942 mi of paved roads.

Guatemalan Socioeconomic Context

Table 1. Guatemalan Economic Data

Subject Descriptor	2013	2014-2018
Gross domestic product, constant prices, % growth	3.3	3.48
Gross domestic product, current prices, billions USD	52.867	70.436
Gross domestic product per capita, current prices	3,414.64	4,021.01
GDP based on purchasing-power-parity (PPP) valuation of	82.614	108.601
GDP based on purchasing-power-parity (PPP) per capita GDP,	5,335.95	6,199.77

GDP based on purchasing-power-parity (PPP) share of world	0.095	0.091
Total investment, % GDP	14.596	15.6686
Gross national savings, % GDP	10.91	12.1308
Inflation, average consumer prices	4.297	4.2272
Inflation, end of period consumer prices	4.495	4.27
Volume of imports of goods and services, % growth	3.186	4.863
Volume of Imports of goods, % growth	4.792	5.2586
Volume of exports of goods and services, % growth	2.461	4.3292
Volume of exports of goods, % growth	4.319	4.6848
Value of oil imports, billions USD	3.317	3.4134
Value of oil exports, billions USD	0.293	0.2206
Population, millions	15.482	17.517
General government revenue, % GDP	12.426	4.27
General government total expenditure, % GDP	14.92	14.7552
General government net lending/borrowing, % GDP	-2.493	-2.2136
General government primary net lending/borrowing, % GDP	-0.937	-0.42
General government gross debt, % GDP	26.042	27.6822
Current account balance, billions USD	-1.949	-2.2278
Current account balance, % GDP	-3.686	-3.5378

Source: Table by authors based on International Monetary Fund (IMF) data. World Economic Outlook online database. Retrieved from www.imf.org.

Guatemala is classified as a lower middle-income group by the World Bank, and achieves a Medium Human Development classification by the United Nations. Guatemala has an economic structure that breaks down, in value added terms as a percentage of GDP, along the following lines: 11.3% agriculture, 29.9% industry, and 58.9% services. Household final consumption expenditure, etc. (% of GDP) constitutes a very high estimate of 88%. Household final consumption expenditure (annual % growth) averaged an annual 3.5% growth in the 2002-2012-time period. Guatemala is strongly open to trade, with exports accounting for roughly 26.3% of GDP and imports an estimated 37.6% of GDP. Guatemala has some 53.7% of its population living under the poverty line, and suffers from strong inequality as well, with a Gina coefficient of 55.9, making Guatemala one of the most unequal countries in the world. Income shares data bear this out, as the richest ten percent of the populace hold some 45% of the income, compared to just over 1% for the poorest ten percent, while in top-bottom quintiles the income shares distribution is roughly 60% to 3%. Compounding income inequalities in Guatemala are inequalities associated with ethnicity and class (Gibbons & Ashdown, 2010).

These background data on the socioeconomic condition of Guatemala are pertinent to a price study for several intuitive reasons. By decreasing disposable income and purchasing power, poverty lowers the consumption level. However, high poverty rates also raise the marginal propensity to consume, and lower income consumers, as a logical matter, have more incentives to be price conscious. Moreover, the racial, ethnic, and class inequalities such as those that exist in Guatemala can make consumers more prone to conspicuous consumption for reasons of status and prestige, as well as more prone to associate higher price with higher quality and prestige. Based on the aforementioned discussion the authors proceeded to empirically investigate the price perceptions of Guatemalan consumers.

RESEARCH DESIGN AND METHODOLOGY

Questionnaire Development

In the first section of the questionnaire, a number of relevant demographic variables were identified (see Table 2), based on earlier studies. In addition to the customary questions regarding gender, age group, income level, and job status, respondents also were asked demographic characteristic questions regarding years of college education and expected job areas.

The second section of the questionnaire contained a set of 40 statements that measure price perception construct item scale items adopted from Lichtenstein et al (1993). Respondents were instructed to indicate their level of agreement with 40 questions on a seven-point, Likert-type scale (7 = strongly agree; 1= strongly disagree). The 40 statements of price perception construct scale items were translated into Spanish using a back-translation procedure. This procedure involved two bilingual individuals, who participated independently in the translation process. The English versions were translated into Spanish and then the Spanish versions were translated back into English. This process was repeated until the statements were easily understandable in Spanish.

Data Collection Procedures

A questionnaire relating to the pricing perception of consumers was administered to primarily students in the Business and Economics Division of Landivar University, in Guatemala. Landívar is a private, Jesuit University in Guatemala. The main campus is in Guatemala City and is known as Vista Hermosa III, and there are satellite campuses in Quetzaltenango, Huehuetenango, Cobán, Zacapa, and other parts of the country. Guatemala City, is the capital and largest city of the Republic of Guatemala, and the most populous in Central America. The city is located in the south-central area of the country and has a large number of green areas. In 2009, it had a formal population of 1,075,000, but the metropolitan population is believed to be at least 2.3 million (City Population, 2014). Guatemala City is home to many communications company headquarters and banking headquarters.

The students in this sample data set are alert to consumer trends and have been studying prices in their academic courses. They have had experience in both the formal and informal market observing product and service pricing. These students are the consumers of the future and thus their academic studies should give them some major insight into the importance of pricing while their practical consumption function as consumers helps them learn about the reality of pricing in the day to day markets of Guatemala.

The data for this study was collected through self-administered questionnaires. The questionnaires were administered in Guatemala City. The survey data were collected from 351 university students at mainly Landivar University (96.3%) and a few other universities in Guatemala.

ANALYSIS AND FINDINGS

Demographic Characteristics of Respondents

The demographic and socio-economic profile of the respondents is presented in Table 2. The sample consisted of about 52.1 male and 47.9 female university students. Approximately one third (35.3%) of the sample's age was younger than 20 years old and the rest were 20 years or more. University student respondents comprised 5.7% of freshman, 60.4% sophomore, 19.7% junior, and 14.2% senior.

Table 2. Demographic and Socio-Economic Characteristics of the Respondents

Grade	%		Income Level	%	
Freshman	77	(21.9)	Very low	5	(1.4)
Sophomore	155	(44.2)	Below Average	11	(3.1)
Junior	69	(19.7)	Average	200	(57.0)
Senior	50	(14.2)	Above Average	121	(34.5)
			Very high	14	(4.0)
Gender					
		%	**Job Status**		%
Male	183	(52.1)	Unemployed	166	(47.3)
Female	168	(47.9)	Part Time	109	(31.1)
			Full Time	76	(21.7)
		%			
Age Group			**Expected Job Area**		%
<20	124	(35.3)	General Business	70	(37.8)
>=20	227	(64.7)	Service	81	(43.8)
			Industrial/Manufacturing	34	(9.7)
Ethnic Background					
Latino	292	(83.2)			
Other	59	(16.8)			

As indicated in Table 1 and 2, of the total 351 respondents, 334 or approximately 95.2% were single and the rest were married 2.8%, divorced 0.9%, and 1.1% other. A significant portion of the total respondents (83.2%) were Latino while 16.9% were from other ethnic groups, mainly white. In terms of income group, 4.5% were from very low income and the below average group, while the majority (57.0%) belonged to average, and 34.5% above average. Only 4.0% indicated that their income is well above the average. With regard to employment, 47.3% of students were unemployed, 31.1% part time and 21.7% were full time employed. Furthermore, between those employed part time and full time 37.8% were expected a general business work, 43.8% in service industry and 18.4% in manufacturing fields. The sample data characteristics are in-line with overall Guatemalan demographic population characteristics.

Factors Affecting Price Perception: Exploratory Factor Analysis

Using the "factor analysis" module in SPSS, the "factors effecting price perception" was analyzed. The principal components' method for initial factor extraction with the criterion Eigenvalue greater than 1 and Varimax method of rotation was applied. Sample size is an element that can affect the adequacy of the factor models. It has been suggested (Hayes, 1992) that the sample size should equal at least 10 times the number of variables; for large numbers of variables the proportion is decreased to five. In similar studies, samples of size approximately 200 were chosen (Parasuraman, Zeithhaml, & Berry, 1985). Sample size for this survey was 351 as it is mentioned above. All the

items were first factor analyzed. Rotated factor loadings were examined assuming different numbers of factors for extraction. As this was based on student data only, the adequacy of the sample size was questionable; the results showed no interpretable grouping of items. Deleting 4 different statements; "*When I shop, I usually compare the "price per ounce" information for brands I normally buy,*" "*I will grocery shop at more than one store to take advantage of low prices,*" "*I have purchased the most expensive brand of a product just because I knew other people would notice,*" "*One should try to buy the brand that's on sale*" and "*Compared to most people, I am more likely to buy brands that are on special,*" all the price perception responses could be incorporated into the analysis. This was carried out. The results showed considerable improvement over the previous attempt as some meaningful patterns emerged and it has been found that there are seven different factors related to the price perception as we expected. Table 3 depicts the sorted rotated factor loadings for the items based on seven-factor extraction. The total figure of 50.13 represents the percentage of variance of all 37 items explained by the seven factors.

Table 3. The Results of Exploratory Factor Analysis

Factor and Items [a]	Factor Loadings	% of Variances	Cronbach Alpha
Factor 1. Prestige Sensitivity		21.145	0.885
1. People notice when you buy the most expensive brand of a product.	.555		
2. Buying a high price brand makes me feel good about myself.	.691		
3. Buying the most expensive brand of a product makes me feel classy.	.789		
4. I enjoy the prestige of buying a high priced product.	.707		
5. It says something to people when you buy the high priced version of a product.	.668		
6. Your friends will think you are cheap if you consistently buy the lowest priced version of a product.	.560		
7. I think others make judgments about me by the kinds of products and brands I buy.	.579		
8. Even for a relatively inexpensive product, I think that buying a costly brand is impressive.	.627		
Factor 2. Price Mavenism		7.619	.891
1. People ask me for information about prices for different types of product.	.735		
2. I'm considered somewhat of an expert when it comes to knowing the prices of products.	.661		
3. For many kinds of products, I would be better able than most people to tell someone where to shop to get the best buy.	.722		

4. I like helping people by providing them with price information about many types of products.	.661		
5. My friends think of me as a good source of price information.	.775		
6. I enjoy telling people how much they might expect to pay for different kinds of products.	.730		
Factor 3. Coupon Proneness		6.842	.894
1. Redeeming coupons makes me feel good.	.652		
2. I enjoy clipping coupons out of the newspaper.	.729		
3. When I use coupons, I feel that I am getting a good deal.	.776		
4. I enjoy using coupons regardless of the amount I save by doing so.	.836		
5. Beyond the money I save, redeeming coupons gives me a sense of joy.	.831		
Factor 4. Price-Quality Schema		4.664	.785
1. Generally speaking, the higher the price of the product, the higher the quality.	.586		
2. The old saying "you get what you pay for" is generally true.	.623		
3. The price of a product is a good indicator of its quality.	.718		
4. You always have to pay a bit more for the best.	.592		
Factor 5. Value Consciousness		4.092	.770
1. I am very concerned about low prices, but I am equally concerned about product quality.	.424		
2. When grocery shopping, I compare the prices of different brands to be sure I get the best value for the money	.595		
3. When purchasing a product, I always try to maximize the quality I get for the money I spend.	.648		
4. When I buy products, I like to be sure that I am getting my money's worth.	.662		
5. I generally shop around for lower prices on products, but they still must meet certain quality	.592		
6. I always check prices at the grocery store to be sure I get the best value for the money I spend.	.595		

Factor 6. Price Consciousness		3.047	.737
1. I am not willing to go to extra effort to find lower prices.	.623		
2. The money saved by finding lower prices is usually not worth the time and effort.	.620		
3. I would never shop at more than one store to find low prices.	.577		
4. The time it takes to find low prices is usually not worth the effort.	.684		
Factor 7. Sale Proneness		2.721	.689
1. If a product is on sale, that can be a reason for me to buy it.	.507		
2. When I buy a brand that's on sale, I feel that I am getting a good deal.	.510		
3. I have favorite brands, but most of the time I buy the brand that's on sale.	.596		
4. I am more likely to buy brands that are on sale.	.558		
[a] Items were measured 7 – Strongly agree, …. 1 – Strongly disagree. KMO= .848; X^2= 5976,582 p = .000 Cumulative variances : 50.13			

Only one item was found that did not load strongly on Factor 5 (below 0.5) or had cross-loadings found. Factor loadings for each item ranged from .42.4 to 83.1. The final research constructs and corresponding measurement items are presented in Table 3.

Factors Affecting Price Perception: Confirmatory Factor Analysis

The identified factor structure was then validated by confirmatory factor analysis using AMOS v.18. The CFA showed a good fit which is shown in Table 4. The χ2 statistic was 58.657 (degrees of freedom=21, p<0.05), which achieved to be non-significance. The X^2/df ratio is 2.79, which is less than 3.0 (it should be between 0 and 3 with lower values indicating a better fit), the goodness of fit index (GFI) was 0.846 and adjusted goodness of fit (AGFI) index was 0.873. These scores are very close to 1.0 (a value of 1.0 indicates perfect fit). The Comparative Fit Index (CFI) was 0.887; Tucker-Lewis coefficient (TLI) was 0.932. All indices are close to a value of 1.0 in CFA. Therefore, the measurement models provide good support for the factor structure determined through the EFA. The model parameters were estimated using the method of maximum likelihood. The average of item scores for each factor in perceived value construct was used as measures in the path model.

Table 4. Goodness of Fit Statistics for Confirmatory Factor Analysis

Model/construct	X^2	X^2/df	RMR	GFI	AGFI	TLI	CFI
Price Perception	58.657	2.79	0.045	0.846	0.873	0.932	0.887

Reliability and Validity Tests

In this study, the internal consistency (Cronbach's α) for the 37-itemscale was .897. The Cronbach's α coefficients for the positive and negative items of the indecisiveness scale were .83 and .86 respectively. To test the appropriateness of factor analysis, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was conducted. The KMO was 0.848, which is very close to the excellent level, 0.92. Bartlett's test of sphericity reveals significance at a level of 0.000 (Chi-square = 5976.582). The result supports reliability and validity of constructs. We examined the reliability of each of the composite constructs by using Cronbach's alpha. These are depicted in last column of Table 3. Cronbach's alpha analysis allowed the identification of 15 sub-dimensions (constructs) that were tested for reliability and validity by means of exploratory and confirmatory factor analysis. All constructs have Cronbach alpha coefficients greater than 0.60 to indicate acceptable internal consistency and reliability. Discriminant validity between the seven factors was measured by matching correlations between constructs. Outcomes specified that the correlation between constructs ranged from .44 to .72, with the correlations of no pair of measures exceeding the criterion of .90 and above according to Hair, Anderson, Tatham, & Black (1998). Therefore, the analysis supported the convergent and discriminant validity of the measures.

Table 5. Correlation Matrix

	Sales Proneness	Coupon Proneness	Price Consciousness	Value Consciousness	Price/ Quality	Price Mavenism	Price Sensitivity
Sales Proneness	1						
Coupon	0.55*	1					
Price	0.60*	0.57*	1				
Value	0.55*	0.49*	0.44*	1			
Price/ Quality	0.67*	0.62*	0.57*	0.51*	1		
Price Mavenism	0.72*	0.59*	0.54*	0.50*	0.63*	1	
Price Sensitivity	0.53*	0.55*	0.62*	0.61*	0.64*	0.52*	1

* Correlation is significant at the .01 level.

Structural Relationships of the Conceptual Model

The final step in the analysis was to test the path model as shown in Figures 1. Model fit determines the degree to which the structural equation model fits the sample data. Model fit criteria commonly used are chi-square ($\chi2$), goodness of fit index (GFI), adjusted goodness of fit index (AGFI), and root mean square residual (RMS). The goodness-of-fit indices for the first and the second model are shown in Table 6. All indices are within the generally accepted limits and they are quite acceptable. Therefore, the path model was accepted to fit the data.

Table 6. Goodness of Fit Statistics

Model/Construct	X^2	X^2/df	RMR	GFI	AGFI	CFI
Path Model	48.65	2.31	0.026	0.93	0.84	0.95

Table 7 lists the structural parameter significance of the conceptual model. All conceptual links were found to be significant; hence, H1-H6 are supported.

Table 7. Results of Estimation Structural Model

Path to	Path From	p-value
Price Consciousness	Sales Proneness	0.023 *
Price Consciousness	Coupon Proneness	0.000**
Price / Quality Schema	Value Consciousness	0.001**
Price/ Quality Schema	Price Consciousness	0.002**
Price Sensitivity	Price/ Quality Schema	0.000**
Price Mavenism	Value Consciousness	0.013 *

Note: **p-value is significant at the .01 level and * p-value is significant at the .05 level (two-tailed).

CONCLUSION

The price perception literature is considered on a multidimensional base. "The dimensions of price perception may change in terms of the roles that price plays on consumers' buying behavior. If price positively affects the buying decisions of consumers, then the positive role of price is mentioned. If it affects negatively, then the negative role of price is mentioned. In order to explicitly understand consumers' price perception, it is important to examine the dimensions of price perception and the relationships among these dimensions" (Gecti, 2014, p. 1).

The concept of price in marketing, selling, and shopping is at the core of a customer's desire for products and services. Price perception theory is at the foundation of the consumer decision-making and buying process. Historically, a great many studies have established the importance of the pricing factor when consumers think about purchasing a product or service (Kalapurakal et al., 1991; Maxwell, 2002; Simmons & Weiserbs, 1992). Price perception is associated with a consumer's response behavior. Behaviors such as dissatisfaction, anger, and outrage have been recognized as customer responses to pricing of products and services (Xia et al, 2004). The literature and actual observations clearly indicate that the price is a very important factor affecting consumption and consumer purchases (Meng et al., 2008). While price, by itself, is not the only factor affecting the purchasing decision, there is limited data that suggest how different constructs affect consumer-buying behavior. It is very clear that variables such as brand name and country of origin can also effect the consumer's price perception (Meng et al., 2008).

With the above framework in mind, the primary aim of this paper was to examine the multidimensional aspect of price perception and answer three basic questions regarding price perceptions: First: does the Lichtenstein et. al, 1993 framework influence overall consumer decision-making? Based on our analysis and finding we can say yes it does. People in our data set have different perspectives on different levels of price attributes but overall the price perception factor does affect their purchase decisions. Second: is price perception, in fact, a multidimensional construct that needs a consumer to consider several other variables to provide solid insight?

While this is an exploratory study using mostly students from a University setting to evaluate price perception, it does provide a perspective and insight into the thinking of consumers. Students are consumers, they evaluate prices and make product and service selections based on their understanding of price. Therefore, the findings in this study provide some understanding of how price perceptions are formed.

Our findings support this idea and demonstrate that consumers are generally not absolutely linear in their consumer decision-making. Attributes such as brand, quality, discounts, and other items affect a consumer's price perception. Finally: can the Lichtenstein et. al, 1993 constructs be utilized to analyze price perception in a developing country? Overall, the results from the structural model analysis support the price perception model established in this paper. As such, this paper empirically validates the conceptual links established between sales proneness, coupon proneness, price consciousness, price quality schema, price manevism, and price sensitivity. In other words, consumers' perceptual evaluation of different price perception constructs are found related to each other. While the analyses in this study focused on one developing country, Guatemala, clearly we have demonstrated that the constructs are valid and can provide significant insight into price perception of consumer decision making in this developing country. We can say that these constructs have value across culture and can be used to evaluate price perception in other developing countries. Replication of the study in other developing countries would further evaluate its validity and applicability worldwide rather than in one developed country such as the U.S.A.

The results of this study provide the evidence for developing a framework for the formation of price perception based on a review of the literature and an analysis of the empirical data. As such, we are able to develop an understanding of the factors affecting price perception formation in a developing country, Guatemala. This knowledge has not previously been synthesized. In general price perception formation is presented as a linear purchasing process. In many cases the formation of price perception, the willingness to pay, and the purchase behavior are regarded as interrelated factors, which are influenced by a number of other factors.

The idea of price perception formation process is of importance to provide more insight into how people in developing countries view the various levels of price. The framework presented in this paper suggests that despite a positive price perception, the outcome of the purchase behavior can be affected, for example, by contextual factors such as store promotions, such as coupons, consumers' price sensitivity, or value consciousness of the consumer. In these situations, marketers are advised to consider this effect in their marketing strategies. Likewise, a cyclical process where consumers adjust their perceptions after they purchase a product or service support marketing strategies oriented, for example, towards ensuring positive purchase experiences on each occasion.

Limitations of this Study

This study has several limitations. First, although the study used a large number of samples, it was conducted in a limited region in one university in Guatemala and respondents are college students. While they are consumers and they have relationships with price and price perceptions, a more cross-sectional sample may provide a different perspective about the concept of price perception. Caution should be used in generalizing the results to larger groups. Second, price perception was operationalized based on general price of products or services. It is possible that future studies can use more specific product or service categories such as luxury products or airline tickets. Finally, this study only focuses on examining the price perception; a more comprehensive conceptualization of the price behavior would create better opportunities to understand the consumer buying behavior.

REFERENCES

Aaker, D., Fuse, Y. Y., & Reynolds, F. (1982). Is Life Style Research Limited in Its Usefulness to Japan? *Journal of Advertising*, *11*(1), 31-36.

Aalto-Setälä, V., Evanschitzky, H., Kenning, P., & Vogel, V. (2006). Differences in consumer price knowledge between Germany and Finland. *International Review of Retail, Distribution and Consumer Research*, *16*(5), 591-599.

Anderson, J., & Markides C. (2007). Strategic Innovation at the Base of the Pyramid. *Sloan Management Review, 49*(1), 83-88.

Biswas, A., & Blair, E. A. (1991). Contextual Effects of Reference Prices in Retail Advertisements, *Journal of Marketing*, *55*(3), 1 -12.

Calder, B., & Burnkrant, R. (1977). Interpersonal Influence on Consumer Behavior: An Attribution Theory Approach, *Journal of Consumer Research*, *4*(6), 29-38.

Chatterjee, P. (2007). Advertised versus Unexpected Next Purchase Coupons: Consumer Satisfaction, Perceptions of Value and Fairness. *Journal of Product and Brand Management*, *16*(1), 59-69.

Chowdhury, H., & Abe, S. (2006). Consumer Perceptions of Value in a Developing Country: A Model and Empirical Test, In *Advances in Consumer Research - Latin American Conference Proceedings*, (p. 154).

City Population. (2014). Retrieved from http://www.citypopulation.de/Guatemala.html

Folkes, V., & Wheat, R. D. (1995). Consumers' Price Perceptions of Promoted Products, *Journal of Retailing*, *7*(3), 317-328**.**

Gecti, F. (2014). Examining Price Perception and the Relationships Among Its Dimensions via Structural Equation Modeling: A Research on Turkish Consumers, *British Journal of Marketing Studies*, *2*(1), 1-11.

Ger, G., & Belk, R. W. (1996). Cross Cultural Differences in Materialism, *Journal of Economic Psychology*, *17*, 55-77.

Gibbons, J. L., & Ashdown, B. K. (2010). Ethnic Identification, Attitudes, and Group Relations in Guatemala, *Psychology*, *1*, 116-127.

Grönroos, C. (1994). From Marketing Mix to Relationship Marketing: Towards a Paradigm Shift in Marketing, *Management Decision*, *32*(2), 4-20.

Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate Data Analysis,* Upper Saddle River, NJ: Prentice-Hall.

Hayes, B. E. (1992). *Measuring Customer Satisfaction*, Milwaukee, ASQC

Kalapurakal, R., Dickson, P. R., & Urbany, J. E. (1991). Perceived price fairness and dual entitlement . *Advances in Consumer Research*, *18*, 788-793.

Kurtulus, K., & Okumus A. (2010). Consumers' Price Perception as a Segmentation Criteria: An Emerging Market Case, *Istanbul University Journal of the School of Business Administration*, *39*(1), 21-34.

Leibenstein, H. (1950). Bandwagon, Snob, and Veblen Effects in the Theory of Consumers' Demand, *Quarterly Journal of Economics*, *64*(2), 183-207.

Lichtenstein, D. R., Ridgway, N. M., & Netemeyer, R. G. (1993). Price Perceptions and Consumer Shopping Behavior: A Field Study, *Journal of Marketing Research*, *30*, 234-245.

Maxwell, S. (2002), Rule-based price fairness and its effect on willingness to purchase, *Journal of Economic Psychology*, *23*, 191 – 212

McGowan, K. M., & Sternquist, B. J. (1998). Dimensions of Price as a Marketing Universal: A Comparison of Japanese and U.S. Consumers, Journal *of International Marketing*, *6*(4), 49-65.

Mendoza, J., & Baines, P. (2012). Towards a Consumer Price Perception Formation Framework: A Systematic Review, In *Proceedings of the Australia and New Zealand Marketing Academy Conference*, Retrieved from http://anzmac.org/conference/2012/papers/173ANZMACFINAL.pdf

Meng, J. S., Nasco, S. A., & Clark, T. (2008). The Direct Effects of Price Perception Constructs and Internal Reference Price on Consumer's Price Perception, *European Journal of Management*, *8*(2), 1-13.

Moore, M., & Carpenter, J. M. (2008). An Examination of Consumer Price Cue Usage in U.S. Discount Formats, *International Journal of Retail and Distribution Management*, *36*(5), 345-359.

Nielsen Global Private Label Report, (2011). Retrieved from http://www.scribd.com/doc/ 60319767/523 -Nielsen-Global-Private-Label-Report-March-2011

Oliver, R. L., & Shor, M. (2003). Digital Redemption of Coupons: Satisfying and Dissatisfying Effect of Promotion Codes, *Journal of Product and Brand Management*, *12*(2), 121-134.

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). Conceptual Model of Service Quality and Its Implications for Further Research, *Journal of Marketing*, *49*, 41-50.

Rice, F. (1992). What Intelligent Consumers Want, *Fortune*, *28*(12), pp. 56-60.

Simmons, P., & Weiserbs, D. (1992). Consumer Price Perceptions and Expectations, *Oxford Economic Papers*, *44*(1), 35-50.

Subhash, J. C. (1989). Standardization of International Marketing Strategy: Some Research Hypotheses, *Journal of Marketing*, *53*(1), 70-79.

The Central Intelligence Agency*, (2014). *The World Factbook*. Retreived from https://www.cia.gov/library/publications/the-world-factbook/geos/gt.html

The Daily Circuit, (2013). How Sales and Coupons Persuade Consumers to Spend More Money, Retrieved from http://minnesota.publicradio.org/display/web/2013/09/03/daily-circuit-psychology-spending-retail

Willetts, K., & Kemp, S. (1995). Foreign Price Perception. *Annals of Tourism Research*, *22*(1), 205-217.

Xia, L, Monroe, K. B., & Cox, J. L. (2004). The Price is Unfair! A Conceptual Framework of Price Fairness Perceptions, *Journal of Marketing*, *68*, 1-15.

Zeithaml, V. A. (1988). Consumer Perceptions of Price, Quality and Value: A Means- End Model and Synthesis of Evidence, *Journal of Marketing*, *52*(7), 2-22.

Zhou, Z., & Nakamoto, K. (2001). Price-Perception: A Cross-National Study Between American and Chinese Consumers, *Advances in Consumer Research*, *28*, pp. 161-168.

This page has been intentionally left blank.

MANAGEMENT COCKPIT AS A LAYER OF INTEGRATION FOR A HOLISTIC PERFORMANCE MANAGEMENT

Armin Roth, Reutlingen University
armin.roth@reutlingen-universtiy.de

ABSTRACT

Management nowadays is confronted by a variety of information originating from either internal or external sources. Thereby, the difficulty to focus on the relevant and company critical key-figures information increases. In practice, information management is often a major weakness of efficient corporate management. That weakness is caused by the lack of a centralized, categorized and summarized presentation and analysis of strategy and decision-relevant information. Management cockpits, a kind of information center for managers, are an approach to meet the challenges of information management. They are a specific work environment for decision makers to get a quick and simple overview of the company's economic situation. In the most completely equipped premises, the entire process is supported - from acquiring information, to analysis, decision-making, and communication. Use of management cockpits, a cross-functional, KPI-based and strategy-oriented controlling and management process, can be successfully established in companies as well as the work of interdisciplinary management teams, which are supported. In order to provide these possibilities, the management cockpit is equipped with a range of functionalities that allow the structuring, categorization and management-adequate visualization of information along with extensive analysis and simulation options. Management cockpits, as a communication and collaboration platform, are a starting point and valuable process companion on the way to holistic and sustainable performance management.

Keywords: Corporate Performance Management, Management Cockpit, Performance Measurement

INTRODUCTION: TERM AND TASKS OF A MANAGEMENT COCKPIT

The management of today is confronted with a variety of information originating from internal and external sources. It is difficult to focus on the essentials and to keep the company on a strategic course in a time of ad hoc and individual information flooding. Furthermore, it is a huge challenge for companies to continuously collect all relevant information about customers, competitors, and markets in a timely manner to evaluate and prepare it quickly and systematically regarding its relevancy and appropriateness to the recipients.

Performance management places a special focus on creating transparency to determine the current position as well as formulating the objectives to be achieved. A strategic overview, without losing sight of details, is essential and critical to success for an effective corporate management (Roth, 2014).

Management cockpits, a kind of information center for managers, are an approach to meet the challenges of information management. They are a specific work environment for decision makers

to get a quick and simple overview of the company's economic situation. In the most completely equipped premises, the entire process is supported - from acquiring information, analysis to decision-making, and communication. This requires the combination of various technical aids and instruments, such as video conference systems, BI technologies, multiscreen controls, etc. In literature, the terms "Management Dashboard" and "Management Cockpit" are oftentimes wrongly and synonymously used. A management dashboard graphically displays several key figures on one screen whereas a management cockpit primarily supports the information analysis phase.

Just like the pilots of a plane taking over the control and responsibility of the aircraft from inside their cockpit, the management is given a set of instruments to successfully control the company. Management cockpits are not only supposed to create transparency of the company's situation, but also offer support regarding the overall management process by making the planning, supervision, and controlling more effective and efficient. Compared to previous approaches, partly identified as "War Rooms," this approach foresees the managers to take a seat inside the cockpit themselves and not let it be monitored by assistants in an information situation center.

Many intentions to establish a management cockpit have failed or haven't met the ambitious requirements and objectives of the past years. As part of the Reutlingen University research area "Enterprise Performance Management & Business Intelligence," a variety of management meetings as well as their upstream and downstream management processes have been analyzed whereas concepts have been created along with how meetings and related processes can be designed more effectively and efficiently overall.

The following displays how a management cockpit can be designed and implemented in order to meet the objectives of a holistic performance management.

Figure 1. Management cockpit of the study program Business Informatics at Reutlingen University

INITIAL SITUATION IN COMPANIES

Nowadays the presentation of PowerPoint verities takes up much room in companies worldwide. Just like MS Excel has established itself as the controller tool, PowerPoint presentations became indispensable for management meetings. However, each presenter and manager represents and confronts management colleagues with his or her own "verity" in the presentation, which ultimately results in many disadvantages (Roth, 2010).

On the one hand, the costs are extremely high until one PowerPoint presentation makes its way to top management due to the enormous need for coordination throughout individual hierarchy levels. The finished presentation requires one individual view and therefore takes several coordination loops. On the other hand, the costs and the duration of the "information refinement" process are difficult to calculate. Furthermore, the risk of manual preparation and individual interpretation (of the upstream management level) of controlling-relevant information prevails.

This condition is mostly not, or only temporarily, tolerated for other business processes. Frequently, the data basis, data quality, and the presented opinion are questioned in the meetings. During the discussions, the issues can mostly not be clarified which results in follow-up jobs and review points. Hence, the efficiency of management meetings suffers and the room for maneuver is partly lost due to a lack of responsiveness (Roth, 2012).

Even though companies have established a uniform database based on centralized data warehouse architecture, the common numerous decentral implemented analysis tools do not meet the requirements to provide a holistic controlling instrument.

INTEGRATION DUE TO A STRATEGY-BASED CONSISTENT CONTROL MODEL

A "Key Performance Indicator" (KPI)-based control requires a clear strategy or control model which rests on the company strategies. Only if

1. the objectives and strategies can be clearly phrased,
2. the necessary measures and initiatives can be defined, and,
3. their realization progress and target contribution can be measured based on indicators, turning away from the tactical control and focusing on the next quarterly results is possible.

The hub and pivot are also Balanced Scorecards, that, when used properly, help to break down the strategies along the responsibility hierarchy into operative levels, ensuring a company-wide anchoring and strategy pursuit (Gleich, 2011).

The management cockpit allows an interlocking of this top-down-driven controlling method with the process-oriented, oftentimes bottom-up-oriented view to a holistic and consistent control model. The advantages of the combination of these different perspectives (Business Process Management and Corporate Performance Management) are obvious and lead to an integrated performance management.

The project-based perspective can also be combined and integrated very easily. This helps to continuously keep the overview of the portfolio and overall project landscape while not losing detailed information (budget, resources, risks, etc.) out of sight.

Furthermore, it is recommended to establish a direct connection between key figures, target, and incentive systems. For this, it is necessary to derive the achievement of the individual manager objectives from the achievement of the controlling indicators. The focus on strategic and operative objectives is increased enormously if management can permanently track the achievement of objectives in the incentive system (Roth, Primm, Rümmelin, & Schlipphak, 2008).

It is also important to identify the cause-and-effect relations between the different measurements and objectives in order to model and visualize their dependencies in the management cockpit (Kobrin, 2010).

Figure 2. Management dashboards (top), cause-and-effect relations diagram (bottom-left) and perspective views of a Balanced Scorecard (bottom-right)

As a result, it is possible for the managers to simulate the potential impacts and effects in the management cockpit in advance. These methods help to strongly focus corporate management on the strategy implementation and the achievement of long-term objectives (Jetter, 2004). The short-term objectives should obviously not be disregarded. Mostly management dashboards, which visualize the relevant parameters in the form of planning deviations for short-term success, are established.

Depending on the management system and the added value organization, division-related, process-oriented or project-related key figures are in a stronger focus. Regarding the selection of contents, early warning indicators are mainly used to point out any initialing defects to the management and to keep the greatest possible room for maneuver open.

In general, not only material parameters but also immaterial indicators such as the ability to develop innovations should be presented (Spath, 2003). It is important to keep a balanced and manageable mix of well-aligned long- and short-term performance indicators to deploy the management cockpit for short-term problems and crisis management as well as monitoring a successful strategy implementation.

VISUALIZATION AND ANALYSIS OPTIONS IN THE MANAGEMENT COCKPIT

### Structuring and Categorization of Information

Next to the control model for the content-related design of the cockpit, the management-adequate visualization of information is an essential acceptance and success factor. In conformity with the control concept, a consequent top-down approach should be chosen. Based on the top success key figures (such as Return On Investment [ROI], Earnings Before Interest and Taxes [EBIT]), which can mostly be visualized and analyzed in management dashboards in single frames within a window, a set-up following a logical view is recommended.

For the most part, information is structured corresponding to internal company structures (subsidiaries and company, product or customer segments, etc.) or company-external structures (market, competitors, etc.). It is recommended to divide the cockpit into walls, so that management doesn't lose the overview and the recognition factor is strengthened. The walls categorize information that is relevant for the decision-making process into different perspectives (Daum, 2005):

- Black wall: Presentation of the most important strategy-relevant key performance indicators and top key figures (e.g. sales and earning situation)
- Blue wall: Detailed view of internal processes and resource situations (e.g. employee capacity, productivity)
- Red wall: Detailed view of market, competitors, and customers (e.g. market shares, customer requirements)
- White wall: Status of strategic initiatives/measurements and most relevant projects

The structuring of the key figures regarding business administrative functions (HR, procurement, controlling, etc.) takes place underneath these top categories. The management can navigate by finger-clicking and swiping inside a conveyor belt of hierarchically or deviation-relevant-arranged key figures and select the respectively relevant key figures. That way, it becomes possible for the management teams to get to work on and save individual assignments of the cockpit walls and the navigation areas beside the standard assignment.

Figure 3. Exemplary navigation and selection options based on tiles and conveyor belts
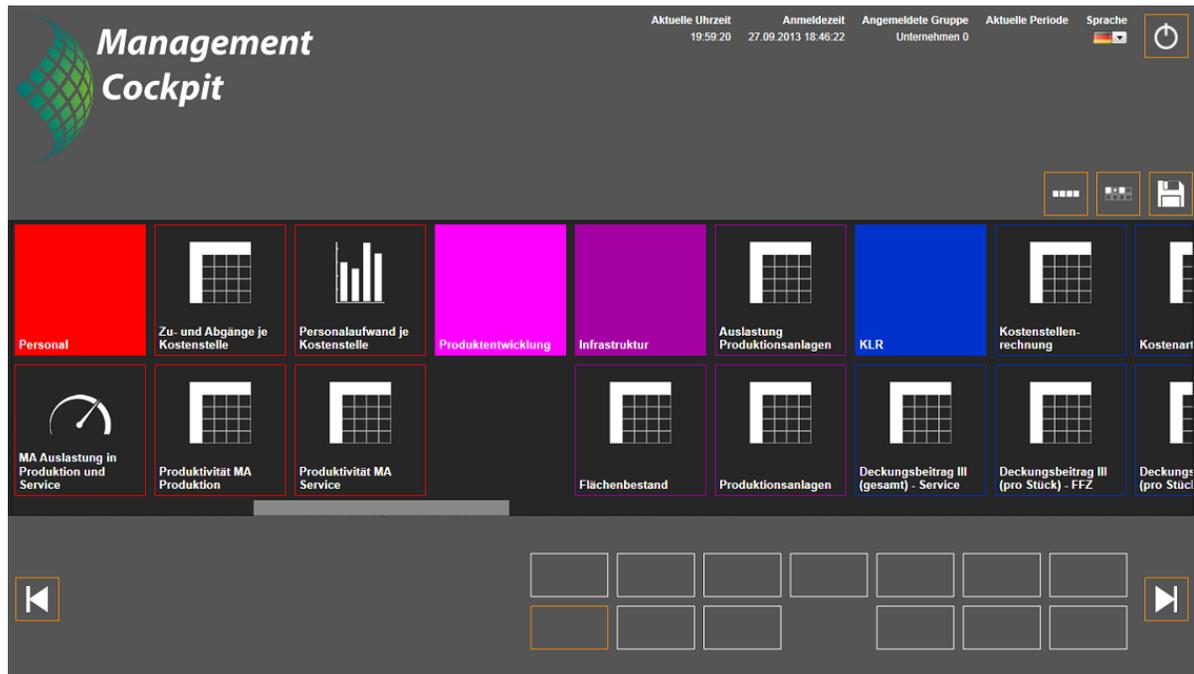
Oftentimes it is questioned if the management is overburdened due to the wealth of information and if there is a risk of losing track. Furthermore, there is the question why several screens are stringently needed. Especially this kind of information structure makes it possible for the management to keep track of decision-relevant circumstances and differentiate the important facts from the unimportant ones in the most simplified manner and follow exceptional situations.

Management-Adequate Visualization

Thanks to the adequate visualization of deviations and exceptional situations, the manager is aware of the actual important issues and is able to dedicate his or her precious time and capacity to these topics without having the feeling of losing something more urgent or important out of sight.

Let's pick up the picture of the pilot again: Only by combining the variety of different information, the pilot is able to guide his plane securely. At this point it isn't questioned, if there is information flooding. Furthermore, the management cockpit only reflects the complexity of the reality which cannot be denied.

Especially the parallel visualization on several screens gives management the opportunity to immediately make impacts of decisions visible in an overall context. For example the question, what consequences requirements on group level have in terms of individual subsidiaries and vice versa, can be answered. This results in a transparency of complex structures and processes as well as their dependencies. This way, a holistic controlling comprehension is developed on all management levels.

Besides the hierarchical categorization of information in the order of importance, the graphical preparation also helps to develop a sustainable transparency. Business Intelligence (BI) technology platforms support the visualization of company data decision-relevant and addressee-suitable. The different BI tools offer a variety of visualization possibilities and alternatives. It is essential that management can capture the core message simply and quickly. Figure 4 shows an example how quantitative and qualitative key figures can be visualized.

Figure 4. Exemplary visualization of quantitative and qualitative key figures

The intuitively operated user interface allows the management to navigate to the issue cases fast, simple, number-, and fact-driven throughout the company structures. Moreover, there is the possibility to continuously monitor business processes and automatically inform the management thanks to an alarm function in case action is needed.

Extensive Analysis and Simulation Possibilities

Next to creating transparency of process and company-critical facts, the management is supported in their decision-finding by extensive analysis and simulation possibilities. Thanks to planning and forecasting functionalities or through data mining methods, forecasts of presumed developments based on to-date information can be visualized ad-hoc in meetings, adequate for the management addressees.

What if ("What happens if …") simulations allow graphically displayed potential economic consequences of entrepreneurial actions (Oehler, 2006). Different scenarios can be acted out by the

management right away (e.g. the graphical simulation of "what effects have got an x percent sales modification on the turnover or key figures such as the Return on Investment or asset turnover" by using a multistage Dupont tree of key figures).

By adjusting the relevant screws in the form of rotary adjustment and asking questions such as "How do quantity of sales, turnover, or profit contribution change if prices are adjusted by x percent?", the management can develop a significantly higher sensibility for concrete economic interrelations.

The immediate and parallel visualization of economic consequences for the company on several screens draws the management a holistic picture of potential decisions and results in an essential decision-making supporting tool. Furthermore the overall picture is given the final touch thanks to textual commenting of the economic facts, definitions, premises and background.

Figure 5. Example of a simulation based on a "What if scenario" (Dolde, 2008, p. 57).
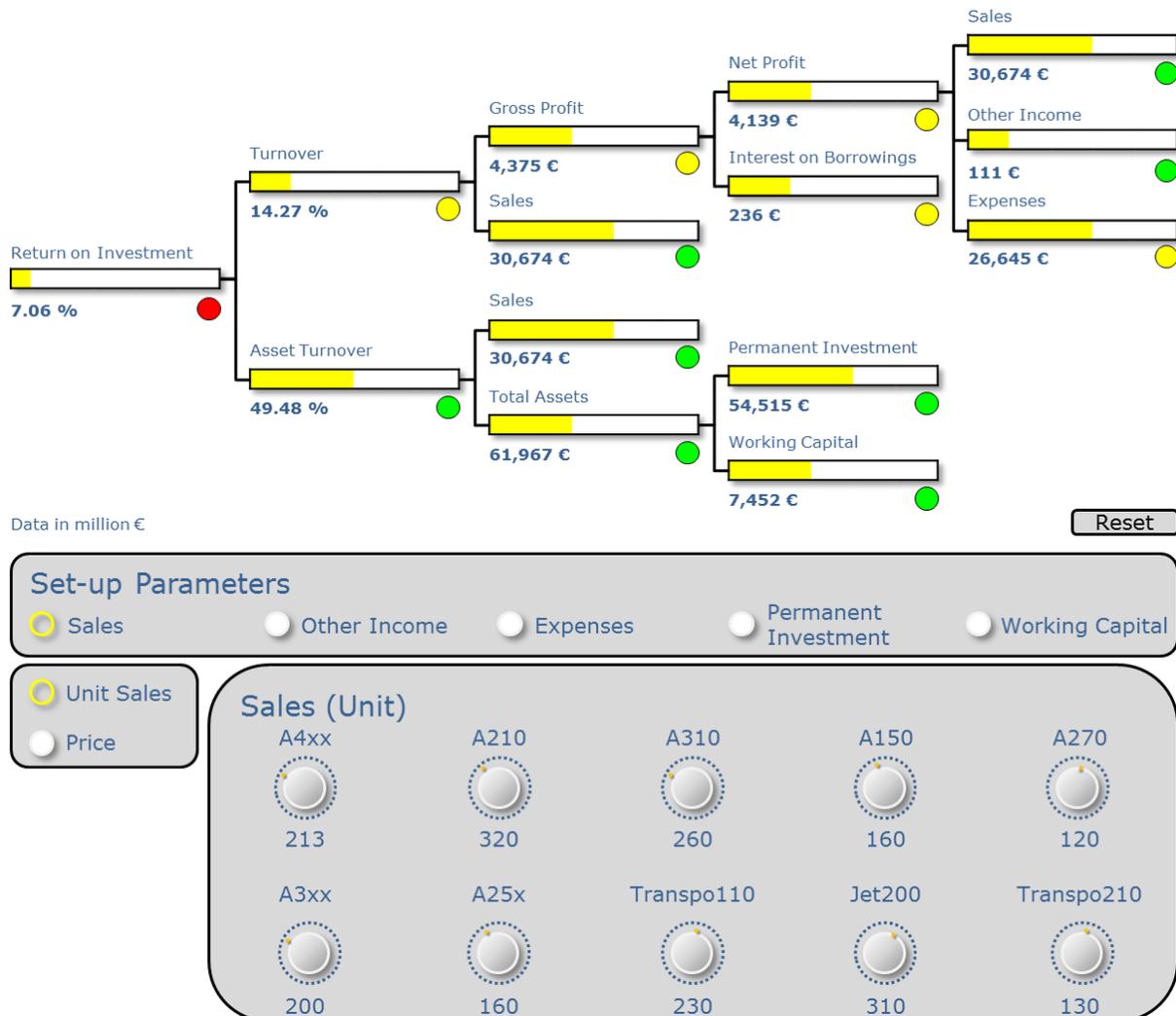
IMPROVED TEAM AND PROCESS SUPPORT WITH COCKPITS

Managers think and act globally. It is normal to operate in different team constellations while working in different locations. That's why it is absolutely necessary to equip the management cockpit with videoconference technology to give managers out-of-town the chance to join in the meeting independently from their location.

Depending on the number of cameras, each participant can be assigned a separate screen so that there are less communication limitations within the team.

It is beneficial for an efficient collaboration if all participants see the currently targeted on-screen discussion at the same time. This is guaranteed by using a digital whiteboard. All analysis steps, no matter if via mouse action or via touch system, can be traced live by each participant. Besides the classic navigation by means of Online Analytic Processing (OLAP) functionalities (via finger pressure), notes can be made with a pen and erased with a sponge. This way, it is possible to directly write in the programs (e.g. in the BI application), websites or videos with "digital ink" but without special tools.

All windows of the management cockpit can be displaced or exchanged randomly throughout the screens and the digital whiteboards. As a result, meeting topics or entire management meetings can be documented, processed, tracked, or recorded electronically for the participants and those who couldn't join. The timely creation of minutes, the documentation as well as forwarding work packages are supported significantly. They can be basis for post-communication within the management team or directed towards further stakeholders (e.g. board of directors).

The management cockpit also offers the space for planning and related discussions and coordination measurements. Post-controlling ensures that all stakeholders are able to channel the information and focus on the objectives.

Management processes can be designed much more efficiently thanks to the possibility to make uniform information and analysis options location-independent and simultaneously available. A common transparency of the strategic and operative facts is generated. As a result, a target-oriented communication and discussion within the circle of the management team is initiated. The management cockpit serves as a jointly used communication and collaboration platform for management decisions.

The questions arising from discussions can be immediately answered by the means of commonly-used analysis and simulation possibilities. Furthermore, the significantly higher communication liability helps to increase the performance of the management team.

CONTRIBUTION TO A HOLISTIC PERFORMANCE MANAGEMENT

With a management cockpit, selected economic scenarios and strategies can be defined, analyzed, and verified and can serve as a basis for integrated performance management (Chamoni & Gluchowski, 2010). Additionally, their implementation can be traced and monitored. Due to the monitor function, the management cockpit supports to recognize and manage crisis situations.

The management cockpit helps to create transparency for all stakeholders on different management levels at any point of time. A common understanding of the company's objectives and situation is created by this transparency within all parties involved in the controlling process. This is a prerequisite to connect people with different thinking and socialization and guide them towards a joint direction. Controlling-relevant stakeholders (board of directors, management board, managers, project leaders, project managers, etc.) are linked to each other thanks to structured information and approach their departments or projects coordinated and aligned but independent from each other. Performance management is effective when the transparency ultimately contributes to employees identifying themselves with the company's objectives and performance orientation.

Thanks to the room to exchange structured information, a management cockpit offers the opportunity to establish a holistic performance management without having to design and implement a continuous control model in a long-running process. The management cockpit, as integration level, rather offers the chance to initiate, actively accompany, and moderate this process.

In summary, the following effects are observed:

- The higher transparency regarding opportunities, risk and the possibility to evaluate decision alternatives ultimately results in better decision quality.
- Due to the uniform information basis and standardized meeting procedures with clearly defined regulations, the participants can focus on the essential facts whereas the meeting duration is shortened and the effectiveness and efficiency are increased.
- An improved management team and process support speeds up decision processes and creates further scope of action.
- By transforming from tactical to strategic management, company potentials can be better exploited.
- If the management cockpit is consequently used, the strategy-oriented, KPI-based controlling and management process is sustainably established within the organization and within the employees' minds.
- Efforts for reporting can be reduced tremendously thanks to centralized data storage, a "Single Point of Truth," standardized reporting processes and layouts.
- Besides integration, the continuous process of improvement is sustainably initiated in terms of a long-term management approach.

REFERENCES

Chamoni, P., & Gluchowski, P. (Ed.) (2010). *Analytische Informationssysteme – Business Intelligence-Technologien und Anwendungen*. Berlin: Springer.

Daum, J. (2005). Trend Report – November 1st, 2005: *Strategy & Performance Management.* Retrieved from http://www.juergendaum.de

Dolde (2008). *Aufbau eines Management Cockpits auf Basis von SAP Netweaver BI und Business Objects XI,* Bachelor's thesis in collaboration with Braincourt GmbH.

Gleich, R. (2011). *Performance Measurement. Konzepte, Fallstudien und Grundschema für die Praxis.* Munich: Franz Vahlen Verlag.

Jetter, W. (2004). *Performance Management.* Stuttgart: Schaeffer-Poeschel.

Kobrin, M. (2010). *Corporate Performance Management als Weiterentwicklung von Business Intelligence.* Hamburg: Diplomica Verlag.

Oehler, K. (2006). *Corporate Performance Management*. Munich: Hanser.

Roth, A., Primm, D., Rümmelin, K., & Schlipphak, M. (2008*)*. KPI-basierte Management-Incentivierung: Ziel erreicht – Zahlung angewiesen. *Business-Intelligence-Spektrum*. Copy 3/2008, pp. 31–35.

Roth, A. (2010). Unternehmenssteuerung mit Management-Cockpits, in *Wirtschaftsinformatik & Management*, Copy 3/2010, pp. 20-25.

Roth, A. (2012). Unternehmenssteuerung und-reporting mit Management-Cockpits, in: Klein, A.: *Reporting und Business Intelligence*, pp. 92 – 104. Munich: Haufe-Lexware.

Roth, A. (2014). *Ganzheitliches Performance Management*. Munich: Haufe.

Spath, D. (2003). *Corporate Performance Management – Bausteine, Konzepte, Produkte*. Stuttgart: IRB Verlag.

Blank inside back cover.

Quarterly Review of
Business Disciplines