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KNOW THY SELF:

An Examination Between Individual Core Self-Evaluations and Demographic Characteristics Among Agricultural Leadership Development Program Participants

Abstract

Engaging learners is one of the most important responsibilities of an educator. Finding opportunities to connect with individuals in a meaningful way is a powerful tool, particularly for leadership educators. The purpose of the study was to determine whether there were any statistically significant relationships between different demographic groups and core self-evaluations among a sample of adult agricultural leadership development program participants. The results of the study found that gender, educational attainment, and geographic region were not statistically significantly related to core self-evaluations. However, there was a statistically significant difference between groups in both the age and organizational level demographic clusters. A recommendation is for educators to use the findings as a starting point to inform learning interventions and to strive to accommodate the needs of individual learners accordingly.

Introduction

"Well, that [is] the news from Lake Wobegon, where all the women are strong, all the men are good looking, and all the children are above average" (Keillor as cited in Tuchman, 2013, para. 3) is a public radio sign-off familiar to listeners of that program. It is the "above average" statement that marks the psychological phenomenon of people's tendency to overestimate themselves in relation to others (Zuckerman & Jost, 2001). For example, a majority of people believe they are more skillful and less risky than the average driver (Svenson, 1981). Previous research has found that most individuals believe they are better than average on being "intelligent, organized, ethical, logical, interesting, fair-minded, and healthy" (Kruger, 1999, p. 221).

In an attempt to explain this effect, Eply and Dunning (2000) conducted four studies to examine whether people's tendency to rate themselves above average was because they tended to underestimate their peers (and accurately predicted their behaviors) or because they overestimated themselves (and accurately predicted their peers' behaviors). The results suggested the latter, individuals tended to overestimate themselves. Various studies have also established this as a result of psychological needs such as boosting self-esteem (Kruger, 1999). However, this effect may have dangerous consequences. For example, because the majority drivers overestimate their skills and believe they are better than others drivers, the result is poor habits and distracted driving (Townsend, 2011). The National Highway Traffic Safety administration claims that 3,450 persons have been killed from distracted driving in 2016, and 391,000 were injured in crashes involving distracted driving in 2015 (National Highway

Traffic Safety administration claims that 3,450 persons have been killed from distracted driving in 2016, and 391,000 were injured in crashes involving distracted driving in 2015 (National Highway Traffic Safety Administration, n.d.). Therefore, avoiding overestimation of skills and abilities may help avoid shortcomings.

Individuals who tend to overestimate themselves would fit into the "seekers" category of Eurich's (2018) four self-awareness archetypes. Self-awareness, whose definition was split into internal self-awareness, knowing ourselves, and external self-awareness which is described as understanding how others see us. Seekers are those that have both low internal and external self-awareness. Such individuals tend to overestimate their abilities and place themselves above the average, even when they are not. To the contrary high self-awareness benefits individuals in their ability to "make sounder decisions, build stronger relationships, and communicate more effectively" (Stine, n.d., para. 1). The advantage of self-awareness is that it can make you a better leader and as such leaders are encouraged to reflect on their performance occasionally and "demonstrat[e] strengths like empathy, inquiry, and emotional regulation" (para. 6).

High self-awareness is also thought to benefit a larger entity than oneself. "The most valuable aspect of self-awareness is that its benefits reach far beyond the individual" (Blumenthal, 2016, para.4). Resick, Whitman, Weingarden, and Hiller (2009) concluded that higher levels of self-awareness, measured as core self-evaluations, have been found to positively correlate with transformational leadership in Chief Executive Officers (CEOs), and that CEOs with high core self-evaluations are "more comfortable empowering others [and focused] on the good of the organization rather than on their individual success" (p. 1374).

Within the literature considerable research has focused on core self-evaluations (Judge, Bono, Erez, & Locke, 2005). For example, previous research has focused on the relationship between job satisfaction and core self-evaluations (Judge & Bono, 2001) as well as core self-evaluations and personality traits (Resick et al., 2009). However, there has been a notable lack of research examining core self-evaluations as a schema within which to design and implement educational programming, particularly programming focused on developing leadership capacity amongst adults. A more comprehensive understanding of dispositional tendencies amongst this audience towards internal awareness is imperative to gain insights and design educational interventions accordingly. Research priority one in the National Leadership Education Research Agenda (Andenoro et al., 2013) identifies the need for learner centric educational approaches "we must seek to understand the individual differences of students and match appropriate learning opportunities to assist in their development" (p. 6). A study focused on identifying the dispositional tendencies amongst adult agricultural leadership development program participants should provide insights that leadership educators can then use to inform their curricular approaches and educational interventions.

Conceptual Framework

Core Self-Evaluations. Core self-evaluation is composed of four core traits (Judge, Locke, & Durham, 1997). First, self-esteem, "the overall value that one places on oneself as a person" (Judge, Erez, Bono, & Thoresen, 2003, p. 303). A second core trait is generalized self-efficacy identified as "an evaluation of how well one can perform across a variety of situations" (Judge et al., 2003, p. 303). Neuroticism is a third trait and has been described as "the tendency to have a negativistic cognitive/explanatory style and focus on negative aspects of the self" (Judge et al., 2003, p. 303). The fourth trait espoused was locus of

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control and has been described as the "beliefs about the causes of events in one's life" (Judge et al., 2003, p. 304). However, Judge et al., (2003) proposed the presence of a higher-order concept indicated by the four core traits because of the conceptual similarities between the four traits and their correlations. For the purposes of this research the theoretical construct of core self-evaluation proposed by Judge et al. (2003) was employed.

Core Self-Evaluations and Age. Previous research examining the relationship between age and core self-evaluation, specifically the traits of self-efficacy and neuroticism, have revealed conflicts. Maurer (2001) found that age was negatively correlated with self-efficacy's key antecedents, including mastery experiences, persuasion, and physiological influences. Because these antecedents affected self-efficacy, it was proposed that age negatively affected self-efficacy for development of skills. Additionally, the relationship between age and neuroticism was investigated through multiple studies by Steiner, Allemand, and McCullough (2012). In their studies, results indicated that older individuals tended to have lower scores on a neuroticism scale than middle-aged and younger adults. Based on the positive relationship between self-efficacy and core self-evaluations observed previously (Judge et al., 1997), the negative relationship between self-efficacy and age (Maurer, 2001) may have implications for core self-evaluations as well. Similarly, the relationship between neuroticism and core self-evaluations (Judge et al., 2003) and neuroticism and age (Steiner et al., 2012) may provide insights related to the nature of the relationship between age and core self-evaluations.

Conflicting results related to the relationships between age and self-efficacy and age and neuroticism may be associated with the samples observed in the independent studies. However, there are a limited number of studies that have specifically examined the relationship between age and core self-evaluations as a higher-order factor. In previous studies, age is frequently analyzed as a control or mediating factor involving core self-evaluations and not reported or analyzed as a variable of interest (e.g. Judge et al., 2005). Consequently, the relationship between age and core self-evaluations has not been formally analyzed. For example, when examining the relationship between core self-evaluations and ascendant jobs, Judge and Hurst (2008) reported a positive correlation between age and core self-evaluations. However, in another study involving core self-evaluations and income and financial strain, a negative correlation was observed between age and core self-evaluations (Judge, Hurst, & Simon, 2009). To the contrary, Besen, Matz-Costa, Brown, Smyer, and Pitt-Catsouphes (2013) found that core self-evaluations did not vary with age, and that there was no correlation between the variables.

Core Self-Evaluations and Gender. Gender and self-esteem variables have been of interest for many studies. For example, in their meta-analytic study Kling, Hyde, Showers, and Buswell (1997) analyzed over 180 empirical research studies that had previously analyzed the relationship between gender and self-esteem. Based on of the results of their analysis the researchers found "males score higher on standard measures of global self-esteem than females, but the difference is small" (p. 470). According to the researchers, one possible explanation is that gender roles put psychological stress on both men and women (Kling et al., 1997). Additional contemporary empirical studies (e.g. Blenidorn, Arslan, Denissen, Rentfrow, Gebauer, Potter, & Gosling, 2016) have also reported similar findings.

Given that self-esteem and self-efficacy are conceptually similar and correlated (Judge et al., 2003), the difference in self-efficacy between gender may be small, based previous self-esteem research. However, previous findings (Kling et al., 1997) are inconsistent with the finding of a more recent and smaller-scale research, in which Diseth, Meland, and Breidablik (2014) found a significant difference in self-esteem as well as self-efficacy between primary school aged boys and girls.

However, the relationship between gender and core self-evaluations has received limited empirical

analysis within the literature. For example, gender and core self-evaluations were analyzed as predictors of perceived stress (Gbadamosi & Ross, 2012). However, the relationship between gender and core self-evaluations was not specifically analyzed. Nevertheless, the results of the study found no linear relationship between gender and core self-evaluations.

Core Self-Evaluations and Organizational Level. Higher-level employees, such as Chief Executive Officers (CEOs) and presidents, have been of interest not only to popular literature but also in scholarly research. Individuals serving in upper level roles have been found to be "are more likely than lower level individuals to have an inflated view of their emotional intelligence" (Sala, 2003, p. 225). Another study also reported that managers with more experience were more likely to be overraters on their own performance and compensation than younger managers (Ostroff, Atwater, & Feinberg, 2004). Previous finding may suggest higher-level individuals tend to be overconfident with a possible explanation that there are fewer individuals that are able to provide effective feedback (Dunning, Heath, & Suls, 2004). Nevertheless, despite evidence that CEOs and other high-level employees tended to overrate themselves, Judge and Hurst (2008) found that individuals with high core self-evaluations had higher levels of occupational status compared with those who had low core self-evaluations.

Core Self-Evaluations and Educational Attainment. Many studies have found a positive relationship between core self-evaluations and educational attainment. Judge and Hurst (2007) reported a positive correlation between core self-evaluations and educational attainment. In their other studies, one (Judge & Hurst, 2008) and two years (Judge et al., 2009) later, positive correlations of .35 and .22 (p-values < .01) were reported respectively. These studies provide evidence of a positive relationship between educational attainment and core self-evaluations.

This relationship, however, has mostly been explored in a series of associated studies (Judge & Hurst, 2007; Judge & Hurst, 2008; Judge, Hurst, & Simon, 2009) where either one or both factors were treated as mediators between other factors: education was found to mediate a significant part of core self-evaluations on growth in job satisfaction, pay, and occupational status (Judge & Hurst, 2008); additionally, core self-evaluations were found to be "a significant moderator of each of the socioeconomic and academic achievement variables" (Judge & Hurst, 2007, p. 1221); and finally both were "key factors linking attractiveness and intelligence to income" (Judge et al., 2009, p. 749).

Core Self-Evaluations and Geographic Region. Consistent with the finding of McCrae (2000) that differences in individual personality vary among cultures, Schmitt and Allik (2005) found that the magnitude of individual differences in self-esteem was more pronounced in individualistic cultures than in collectivistic cultures. Although in the same study, a significant difference between national self-esteem levels (measured by Rosenberg Self-Esteem Scale) was not found, they did find that the "cultural dimension of Masculinity was significantly related to national self-esteem" (p. 634) and that cultures which place more equal values on men and women tend to have higher-self-esteem overall. A study by Bleidorn et al. (2016) supported this finding and found that the difference between self-esteem levels of men and women were more pronounced in Western cultures. Additionally, the influence of self-esteem on life satisfaction has also been shown to differ by culture (Diener & Diener, 1995). Specifically, this influence was more pronounced in individualistic cultures compared to that in collectivistic cultures.

Previous findings emphasize differences on a global scale and are generally related to cultural differences. The United States also has a complex cultural diversity (Wolf, 2018), so a difference in core self-evaluations of people from different regions within a defined region may yield informative results (Rentfrow et al., 2013).

Purpose & Research Objectives

The purpose of this study was to examine the nature of the relationship between demographic characteristics and core self-evaluations amongst adult agricultural leadership development program participants. The study was driven by the following research objectives:

1. Describe individual core self-evaluations based on demographic characteristics.
2. Determine whether demographic characteristics were statistically significantly related to core self-evaluations.

Methods

To address the research objectives a descriptive research design was employed (Ary, Jacobs, Sorensen, & Razavieh, 2010). The data were collected as part of a larger research project, as such, based on recommendations within the literature (Kirkman & Chen, 2011), the relationship between the current research and previous research studies is important to identify. The data presented in the current study extend on data previously analyzed (Lamm, Carter, & Lamm, 2016). First, and most importantly, the previous research did not include any core self-evaluation data. Therefore, the present study is unique and unrelated to previous research. Second, the results published previously only included adult agricultural leadership development programs in the southern United States, the current study includes programs across the United States as well as international programs.

Sample and Procedures. To include as comprehensive a sample as possible a census of adult agricultural leadership development program participants, including alumni, was conducted (Rossi, Lipsey, & Freeman, 2004). Based on the population of interest adult agricultural leadership development programs associated with the International Association of Programs for Agricultural Leaders (IAPAL) were identified as the sample frame. Previous research has found programs affiliated with IAPAL share common characteristics (Kaufman, Rateau, Ellis, Kasperbauer, & Stacklin, 2012; Lamm, Lamm, & Carter, 2014).

An email was sent to program directors associated with active programs within the IAPAL database (IAPAL, 2013) inviting their program to participate in the study. A total of 35 programs were listed in the IAPAL database and a total of 28 program directors agreed to have their program participate in the research. Programs were located in both the United States and Canada.

In the spring of 2014 data were collected using an online questionnaire. The data collection process followed the Tailored Design Method proposed by Dillman, Smyth, and Christain (2008). Prior to the survey a pre-notice e-mail was sent to potential respondents by the program director associated with their leadership development program. Approximately two-days later the research sent an invitation to each potential respondent. A total of 7,668 survey invitations were sent. At least three additional reminder messages were sent to potential respondents encouraging their participation. A total of 1,171 completed questionnaires were returned for a 15% response rate. The response rate was deemed acceptable, although low, according to social science response rate standards reported in the literature (Baruch & Holtom, 2008). Additionally, non-response error was tested based on recommendations within the literature. Specifically, early respondents were compared with late respondents and no statistically significant differences were observed. Therefore, the data were deemed acceptable for further analysis (Lindner, Murphy, & Briers, 2001).

Data. Within the survey, core self-evaluations were scored based on Judge, Bono and Thoresen's scale (2003). The scale includes 12 items, such as I am confident I get the success I deserve in life. Responses were scored on a five-point Likert-type scale ranging from 1 – strongly disagree to 5 – strongly agree. The core self-evaluation index was found to have a Cronbach's α of 0.82.

Demographically, respondents provided information regarding their sex, age, level of employment, and level of education. Geographic region of the program was assigned based on the Extension regions (Lamm et al., 2016; USDA, 2014).

Data Analysis. Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 25. A one-way, between-subjects ANOVA was conducted to compare the effect of each demographic group relative to core self-evaluations (Keith, 2006).

Results

Core self-evaluation scores of adult agricultural leadership development program participants with respect to gender, age, organizational level, educational attainment and region are displayed in Table 1. The lowest individual index score reported was 2.08 and the highest individual index score was 5.00. The lowest mean core self-evaluation score was observed in the under-30-year-of-age group (M = 3.64, SD = .43) as well as the nonsupervisory employee group (M = 3.64, SD = .48). The group of high school diploma/GED holders had the highest observed average core self-evaluation score (M = 3.85, SD = .39).

A one-way between-subjects ANOVA was conducted to detect the effect of demographic characteristics on core-self evaluations. Males were reported to have a higher average core self-evaluation score (M = 3.75, SD = .46) than females (M = 3.74, SD = .47). However, the difference between groups was not found to be statistically significant. Therefore, gender was not found to have an effect on core self-evaluation scores. Additionally, the results of educational attainment and region indicated that between the groups associated with these factors, no statistically significant difference in core self-evaluation scores was observed.

Table 1.
Frequency of Respondent Perceptions.

Characteristic	*N*	*Min*	*Max*	*Mean*	*SD*	*F*	ρ
Gender						.18	.67
Male	738	2.08	5.00	3.75	.46		
Female	433	2.42	5.00	3.74	.47		
Age						2.38*	.04
Under 30	25	2.75	4.58	3.64	.43		
30 to 39	198	2.17	5.00	3.69	.46		
40 to 49	234	2.42	4.83	3.72	.49		
50 to 59	420	2.25	5.00	3.76	.45		
60 to 69	253	2.08	4.92	3.82	.44		
70 and Over	32	2.67	4.75	3.81	.45		
Level						5.52***	.00
Nonsupervisory employee	197	2.25	4.92	3.64	.48		
Manager	399	2.08	5.00	3.72	.47		
Owner, CEO, President	423	2.58	5.00	3.80	.43		
Not applicable	159	2.75	5.00	3.80	.46		
Education						.65	.71
High school diploma/GED	24	3.17	4.50	3.85	.39		
Trade/technical training	18	2.67	4.08	3.57	.39		
Some college - no degree	108	2.50	4.83	3.77	.48		
Associate/Community college degree	68	2.75	5.00	3.78	.53		
Bachelor's degree	574	2.08	5.00	3.74	.45		
Master's degree	310	2.17	4.83	3.75	.47		
Professional degree (e.g., JD, MD)	31	2.92	4.92	3.73	.45		
Doctorate (e.g., PhD, EdD)	47	2.92	4.83	3.80	.46		
Region						.42	.79
Western	336	2.42	4.83	3.73	.43		
North Central	440	2.08	4.92	3.76	.45		
Southern	193	2.42	5.00	3.77	.49		
Northeast	133	2.17	5.00	3.73	.52		
Non-US	80	2.42	4.67	3.77	.48		

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A significant effect of age group on core self-evaluations at the $p < .05$ level for the six conditions [$F(5, 1031) = 2.38$, $p = .04$] was found. A visual representation of the results is presented in Figure 1.

Additionally, there was a significant effect of organizational level on core self-evaluations at the $p < .01$ level for the four levels of occupation [$F(3, 1044) = 5.52$, $p = .00$]. A visual representation of the results is presented in Figure 2.

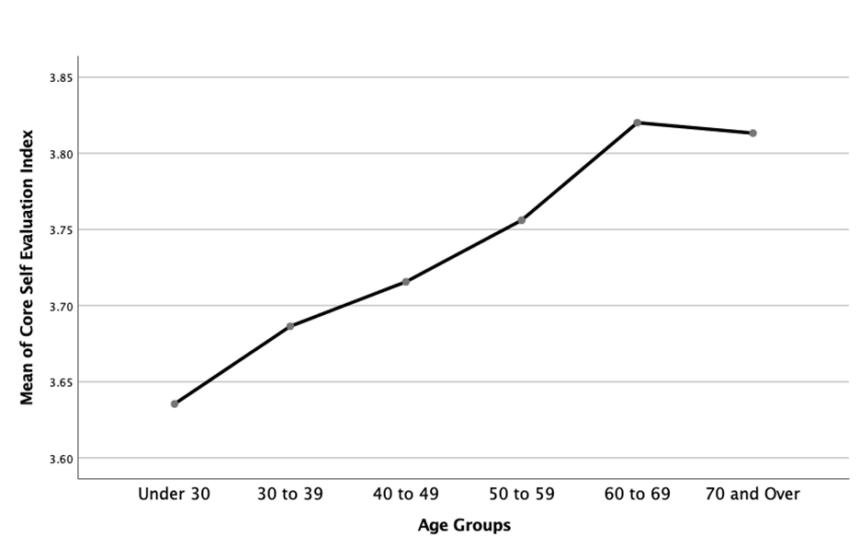

Figure 1. Core self-evaluation index scores based on age groups.

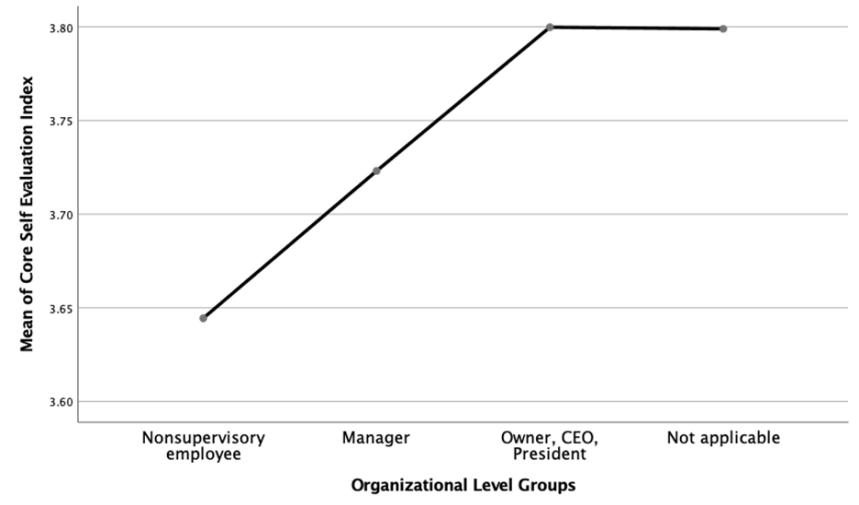

Figure 2. Core self-evaluation index scores based on level of employment groups.

Conclusions, Recommendation and Implication

The ability to effectively observe and evaluate oneself is a powerful tool from both a leadership (Bass, 2008) and educational (McKeachie & Svinicki, 2013) perspective. "Awareness about oneself as a learner helps students to allocate their personal resources"

(McKeachie & Svinicki, 2013, p. 295), therefore, core self-evaluation tendencies may be a valuable tool for leadership educators to base educational interventions or plans. In doing so, educators are better equipped to identify and understand the individual differences of learners and to provide appropriate learning opportunities accordingly (Andenoro et al., 2013). The results of the present study provide a set of baseline observations that may be a helpful resource to leadership educators as they plan learning approaches.

Although the results of the study provided novel insights within a sample population of adult agricultural leadership development program participants there are a number of limitations associated with the study that must be acknowledged. First, the results of the study are only applicable to the sample included in the research. The forthcoming implications and recommendations are only intended to apply to the respondents included in the study.

Second, within the sample frame, the response rate was relatively low. Although within the limits of previously established social science research (Baruch & Holtom, 2008) and examined for non-response error (Lindner et al., 2001) with no bias observed, there is still the potential that the data is not representative of the larger population. Therefore, it is recommended that regardless of the results reported in the study, leadership educators always treat each learner, and each learning environment independently and cater to the needs of individuals.

The results of this empirical study are intended to provide an initial set of guidelines and a starting point for planning. For example, the results of the study might be useful for hypothesis setting and testing within learning environments. Observations and learner needs might either confirm or refute the reported results; however, the present study provides a starting point for such rigorous teaching approaches. A recommendation would be for leadership educators to use the current results to inform learning intervention design from an exploratory perspective. Using such an approach should provide educators an opportunity to examine whether learning interventions are more or less effective depending on the amount of self-awareness learners are anticipated to have. An additional recommendation would be to administer the core self-evaluation instrument as part of a training curriculum to both provide insights to individuals as well as inform programming decisions based on the needs of the learners. A third overarching recommendation would be for additional replication studies to provide additional insights as to the nature of core self-evaluations among both the current population of interest, as well as other leadership development, or general educational populations.

Core Self-Evaluations and Gender. The results from one-way ANOVA analysis indicated that there was not an effect on core self-evaluations based on respondent gender. Specifically, the observed difference between core self-evaluations scores of males and females were not found to be statistically significant in our sample. The result is somewhat consistent with the results of Kling et al. (1997) that found gender differences related to self-esteem to be small. An implication based on this finding is that leadership educators are likely to be equally effective with both male and female learners when educational interventions require core self-evaluations or self-awareness. An associated recommendation would be for leadership educators to look for opportunities to capitalize on the consistency observed in the study and provide learning spaces where all individuals can explore and perform core self-evaluations (McKeachie & Svinicki, 2013).

Core Self-Evaluations and Educational Attainment. In the current study, the effect of educational attainment, evaluated over six levels from high school diploma to Doctorate degree, was not found to be statistically significantly associated with core self-evaluations. This result contradicts the positive relationship previously reported in the literature (Judge & Hurst, 2007; Judge & Hurst, 2008). This contradiction may be explained by differences in samples in the studies. It is possible that other characteristics of the sample, such as occupation, may be correlated to educational attainment, and hence the difference in results. An associated

recommendation would be for leadership educators to use the consistency observed across educational levels to frame learning opportunities and encourage individuals from various educational backgrounds to share their perspectives and insights.

Core Self-Evaluations and Geographic Region. The results of the study indicate that across the four regions of the United States (USDA, 2014) and one non-United States group, region did not have a statistically significant effect on core self-evaluations. Although McCrae (2000) and Schmitt and Allik's (2005) studies indicate that there is a difference in self-esteem between different cultures, it is possible that the difference in cultures between different regions of the United States might not be pronounced enough for the effect of region on core self-evaluations to be detected. Non-significant findings from the study may imply that as it relates to the present sample, it might not be as important to consider region relative to other factors when considering demographic group associations with core self-evaluation differences.

Core Self-Evaluations and Age. Effects of age on core self-evaluations were observed. It is indicated from the results that higher age is associated with higher core self-evaluation scores. This finding is consistent with Judge and Hurst's (2008) where a positive correlation between age and core self-evaluation was observed. One possible reason for the result might be that as individuals age they tend to acquire more personal insights and self-awareness. A recommendation based on this result is that leadership educators may want to consider providing learning interventions and plans tailored for the learning audience. Specifically, it may be appropriate for leadership educators to plan for less time required for some learners to introspect and think about themselves from a self-awareness perspective. To the contrary if a learning group is composed of individuals that may not have as high of core self-evaluations more time may need to be allocated for the same type of introspection activity. Providing the time and guidance necessary for such activities should provide learners a more effective learning environment.

Core Self-Evaluations and Organizational Level. Regarding organizational level, the study results indicated a statistically significant difference between groups relative to core self-evaluations. Ostroff, Atwater, and Feinberg's (2004) finding that older and more experienced managers tend to overrate themselves on performance and compensation is in line with our findings on the effects of both age and organizational level. A possible explanation for this observation is that both age and organizational level may be correlated. Logically, individuals may be expected to ascend within an organization as the accrue experience. Moving from non-supervisory roles, to a management role, to a senior executive role may take time within a traditional organizational hierarchy. However, regardless of the antecedents of the observation, the results indicate that individuals move into more senior roles they tend to have higher levels of core self-evaluation. A recommendation based on the results is for leadership educators to consider organizational level of learners when developing learning plans. Unlike some demographic characteristics such as gender, educational attainment, or geographic region a statistically significant relationship between organizational level and core self-evaluations was observed.

General. The results of this study should be used as an informational resource for further research in core self-evaluations in educational settings. For example, a study examining core self-evaluations as a mediating factor between demographic characteristics and other outcomes of interest may build upon the current results. Despite the statistical significance of the results observed, no causality can be concluded, which means that the observed relationships between core self-evaluations and age as well as organizational level do not imply any causal effect that these specific demographic characteristics have on core self-evaluations. In other words, the result of this study cannot be interpreted in the way such that age or organizational level causes higher or lower core self-evaluation scores. Nevertheless, the results have the potential to serve as a starting point for leadership educators as they plan leadership programs, additionally, the results serve as a point of reference for future research to better inform more effective models of leadership education.

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