Abstract

Appreciative Intelligence® is defined as the capacity to see the potential in any situation and act on it with success. While this construct has begun to generate a robust body of literature, it has been hampered by its lack of a psychometric instrument for measuring the construct. Over the course of two studies, development of the Appreciative Intelligence® Scale (AIS) is described. The AIS is a 26-item survey organized into six factors. Study 1 explores the factor structure of the AIS using EFA. Study 2 confirms the factor structure using hierarchical confirmatory factor analysis (HCFA) and provides evidence for the convergent, discriminant, and criterion-related validity of the AIS using hierarchical regression analyses. The results of these studies support the a priori six-factor structure of the AIS, indicating it is a valid measure Appreciative Intelligence® that predicts proactive behavior at the individual, team, and organizational levels.

The Development and Validation of the Appreciative Intelligence® Scale

Over the past decade, scholarship within the social sciences has been influenced by a surge of research into the positive aspects of human life (e.g. Seligman, 2018; 2011; Lomas, & Ivtzan, 2016; Cameron, & Spreitzer, 2013; Cameron, Mora, Leutscher, & Calarco, 2011; Dutton & Spreitzer, 2014; Cameron, Dutton, & Quinn, 2003). The field of positive organizational scholarship (POS) has emerged with “an emphasis on identifying individual and collective strengths (attributes and processes) and discovering how such strengths enable human flourishing (goodness, generativity, growth, and resilience)” (Roberts, 2006, p. 292).

Historically, clinical psychology has addressed human dysfunctions by focusing on deficits in behavior. Today the field of positive psychology (PP) explores: “positive subjective experiences, positive individual traits, and positive institutions promised to improve the quality of life and prevent the pathologies that arise when life is barren and meaningless” (Seligman and Csikszentmihalyi, 2000, p. 5). In their summary, Sekerka, Comer, and Godwin (2014) state, “scholars across various organizational disciplines have begun to pose questions aimed explicitly at describing, explaining, and predicting what forms of thinking, feeling, and behavior are associated with the best of humankind […] Work in these areas has sought to leverage and enhance effectiveness in a way that goes beyond promoting basic organizational survival, seeking instead to uncover what contributes to personal and collective thriving in the workplace” (2014, pp. 435-6).

Within the field of organizational development, Appreciative Inquiry, has become an effective framework for exploring factors that give rise to organizational generativity. Research and practice in Appreciative Inquiry suggests researchers cultivate an awareness of the negativity bias that pervades any investigations into organizational life and reframe that bias as positive possibilities that often go under-noticed in common human systems (Sardana & Thatchenkery, 2017; Dey & Thatchenkery, 2017; Stavros, Godwin, & Cooperrider, 2016). Appreciative Inquiry asserts that asking positive questions in organizational change processes leads to organizational stakeholders creating positive images of their future, and in turn these positive images lead to positive, long-lasting actions (Cooperrider, 1999). Recent empirical findings have shown that using an Appreciative Inquiry approach for organizational change processes can help effectively increase psychological capital (Tuomas, Lehtimäki, & Thatchenkery, 2017; Verleysen, Lambrecths, & Van Acker, 2014; Daulon, Greiner, Hudson, Jolliff, Kerr, & Thatchenkery, 2017). Fredrickson’s work effectively supports the argument that an appreciative stance in organizational change positively impacts the affective side of transformation because it creates upward spirals of positive emotions in organizations (Fredrickson, 2013; 2009). Specifically, the positive emotions of hope, optimism, compassion and awe strengthen a person’s ability to bring their positive images of the future into fruition – the positive emotions and correlative outcomes appreciative work generates. (Fredrickson, 2009; Wolf, 2017).

If a researcher takes an appreciative approach to organizational life which in turn leads to desired organizational outcomes, the question arises: What are the inherent and unique qualities of the individuals within organizations who apply appreciative tactics? Thatchenkery and Metzker (2006) proposed that some individuals possess Appreciative Intelligence®, or the ability to perceive a positive inherent generative potential in a situation and to act purposively to transform the potential into successful outcomes. Thatchenkery’s research into the 1980s and 1990s success of foreign-born entrepreneurs in Silicon Valley found that successful venture capitalists were asking the questions such as “How can I make this work?” as opposed to “What are the chances this idea will fail?” (Thatchenkery 1997; 2001) Their ability to see positive possibilities-- even when others did not-- helped create a climate of opportunity recognition, resilience and high anticipation of positive outcomes throughout the Silicon Valley region. Their lively, engaged, positive and hopeful work ethic was contagious and became an organizing force and led to the phenomenal rise of the networked world in the Silicon Valley of the late 20th and early 21st century. (Thatchenkery 2001; Coghlan & Brydon-Miller, 2015; Thatchenkery & Heineman-Pieper, 2011).

Thatchenkery and Metzker (2006) performed a thematic analysis of 960 stories of “Leaders and Success” from Investor’s Business Daily over a ten-year period. Exploring the life stories of successful leaders, themes such as their emotional reaction to failure, capacity to reinterpret traumatic events into learning opportunities, ability to work from “rags to riches,” capacity to see the positives in distressing situations, and childhood attitudes toward success emerged. Based on these findings, as stated earlier, Thatchenkery and Metzker (2006) conceptualized Appreciative Intelligence® as the ability to reframe and perceive the positive potential in a situation and to act mindfully to transform the potential of a situation to positive outcomes. Embedded in the theory of multiple intelligences proposed by Gardner (1983; 1999), which demonstrated that intelligence was not a single ability but a number of capacities, Appreciative Intelligence® adds to the intrapersonal and interpersonal intelligences popularized by Goleman (1994) and Salovey and Mayer (1990).

Although literature on Appreciative Intelligence® fits within an emerging body of research that stresses the relevance of perceiving positive generative potential inherent in difficult situations (i.e. Seligman, 2002; Tugade & Fredrickson, 2004), to date it has not received much empirical research attention. Just over 25 peer reviewed articles on the theory of Appreciative Intelligence® have been published so far on it to date and most of these based their arguments on case studies or interview data. Because existing research on Appreciative Intelligence® has been limited by a lack of a generalizable measure of this construct, the purpose of the present study is to describe the development and validation of the Appreciative Intelligence® Scale (AIS), a multidimensional measure of Appreciative Intelligence® placed in a nomological network of individual differences, workplace perceptions, behavioral correlates, and important organizational outcomes.

Following Hinkin’s (1995) recommended practices for scale development, we conducted two studies in order to create and validate the AIS. Study 1 describes the development and psychometric properties of the AIS. Study 2 provides evidence for the convergent, discriminant, and criterion-related validity of the AIS.

**Study 1**

In accordance with Thatchenkery and Metzker (2006), Appreciative Intelligence® is a higher-order latent variable indicated by six discrete dimensions within a person: positive affectivity, creativity, tolerance for uncertainty, conviction, strategic awareness, and irrepressible resilience (See Figure 1). This conceptualization of Appreciative Intelligence® includes dimensions of observable behaviors, internal beliefs, and motivations.

-Insert figure 1 Here-

**Positive Affect.**The concept ofpositive affect is defined as the tendency to experience positive emotional states (Watson & Nagaron, 2010). Research has shown that positive affect is a psychological trait that is at least partially predictive of diminished physiological reactivity to stress (Chida & Hamer, 2008) and may influence an individual’s choice to focus more on the positive features of an encountered stressor (Hemenover, 2001). Research has shown positive affect as a factor in a greater production of unique cognitive associations by people (Isen, Johnson, Mentz, & Robinson, 1985) and a measurable, better performance on standardized tests of creative thinking (Isen, Daubman, & Nowicki, 1987). Building on this research, Fredrickson’s broaden-and-build theory (2004) suggests that positive affect broadens an individual's momentary thought-action repertoire and promotes the discovery of novel and creative actions, ideas and social bonds.

**Creativity**. Creativity has a myriad of definitions as a complex construct, or theory. Most definitions encompass two required attributes in a creative person. First, a “creative” person must generate novel or original ideas, and second, those ideas must be judged as valuable, useful or unique by appropriate observers (Amabile, 1996; Czikszentmihalyi, 1996; Simonton, 1997). In a meta-analysis of variables associated with creativity, Ma (2009) defined creativity as “the ability to reorganize the available knowledge, information, cues, facts and/or skills in a person’s reservoir to generate new ideas of useful solutions” (p. 39). While there is debate regarding whether creativity is a cognitive ability to be demonstrated, or a personality trait that is/is not to be possessed (i.e. Cattell, 1971; Halpin, Halpin, & Torrence, 1974), for purposes of this research, we herein employ the cognitive conceptualization of the construct, or theory. Research suggests that creativity is an important factor in the creation of effective organizations and managers (Mott, 1972; Scratchley & Hakstain, 2001) and solutions to complex interpersonal problems (Plucker & Renzulli, 1999). In the context of organizational decision-making, creativity allows the individual to more fully generate potential possibilities within a given situation.

**Tolerance for Ambiguity***.* The term describes the tendency to perceive ambiguous situations as desirable (Budner, 1962), that is, a person’s tolerance for ambiguity. Individuals with low tolerance for ambiguity have adverse reactions to uncertain situations and perceive them as a stress or threat and thus something to avoid (Furnham & Marks, 2013), which in turn causes them to react prematurely and to avoid ambiguous stimuli (Furnham & Ribchester, 1995). Furthermore, individuals with low tolerance will cling to the familiar or even superimpose distorting, simplified, clichés upon stimuli (Furnham & Ribchester, 1995). Such reactions would prove to be obstacles to seeing positive possibility in ill-defined situations. Related to uncertainty avoidance and risk-taking propensity, individuals with higher tolerance for ambiguity, however, are not off put by undefined situations. Instead, they find risk and uncertainty challenging and interesting.

**Conviction***.* Related to Bandura’s (1995) concept of self-efficacy, conviction represents the belief that one has the capability to organize and execute the courses of action required to manage prospective situations. Past research has indicated that higher self-efficacy predicts prosocial behavior (Caprara & Steca, 2005) and increased work-related performance (Stajkovic & Luthans, 1988). Likewise, conviction describes an individual’s belief in his or her ability to be successful, and it is related to the concept of self-filling prophecies (Eden, 2003). Conviction provides an individual with a positive future image of having effective outcomes and serves as an important cognitive prerequisite in approaching situations with a belief one will be successful.

**Situational Awareness.**Defined originally as “the perception of the elements in the environment within a volume of time and space, the comprehension of their meaning and the projection of their status in the near future” (Endsley, 1988, p. 97), situational awareness has become a relevant construct across a variety of organizational contexts as ability to understand the ‘big picture’ (Vieweg, 2012). Endsley (1995) explains that situational analysis involves three specific levels of awareness/understanding: perceiving critical factors in the environment, understanding what those factors mean, especially in relationship to the individual’s goals, and understanding what will happen in the future with the system. Thus, individuals with higher situational awareness have a heightened awareness of their system and are also better able to make sense of the system and predict the future outcome of possible actions – even in the face of incomplete data. As a result, research suggests that individuals with keen situational awareness are better equipped to make tactical, strategic decisions (Harrald & Jefferson, 2007).

**Irrepressible Resilience***.* Conceptualized as the ability to adapt to stress and adversity and bounce back from difficult situations (Leadbeater, Dodgen, & Solarz, 2005; Luthar, Ciccheti, & Bronwyn, 2000), resilience has gained traction in the literature in recent years. Irrepressible resilience refers specifically to the “quality of not buckling under stress and returning to a state of strength despite weakening forces around” (Thatchenkery & Metzker, 2006, p. 30). Siebert argued that highly resilient individuals have an important advantage over non-resilient individuals as they “get through the distress, orient quickly to the new reality and cope with immediate challenges. They bounce back and often spiral upward, stronger than before” (2005, p. 2). Individuals who have high resilience are more capable of learning along the road from the blocks and problems they encounter and to use such knowledge to deal with future challenges (Salovey, Bedell, Detweiler, & Mayer, 1999). Easily adaptive to new experiences, resilient individuals are also insightful, which aids them in creating and acting on innovative solutions (Klohnen, 1996).

In summary, we believe that Appreciative Intelligence® is indicated by six discrete dimensions within a person: positive affect, creativity, tolerance for uncertainty, conviction, strategic awareness, and irrepressible resilience. In Study 1, we expected a six-factor model of Appreciative Intelligence® to emerge.

**Method**

In the interest of developing a parsimonious scale composed only of those items that best characterized the constructs, the research study began by writing a large item pool that deliberately oversampled the construct space (Little, Lindenberger, & Nesselroade, 1999) and could be reduced through subsequent analyses (Hinken, 1995; Spector, 1992; Stanton, Sinar, Balzer, & Smith, 2002). For the study, we wrote 140 items set to a 5-point Likert scale in order to capture the content domain of AI. These items were rationally written and consistent with the definition for each of the six content domains that were previously presented (Hinken, 1995; Schwab, 1980).

To start, we subjected the 140-item pool to a content analysis by asking a sample of 9 management Ph.D. students to rationally sort the items. This procedure involved asking raters to use their deductive reasoning to categorize the randomized list of items on their *a priori* dimensions. High agreement between raters provides preliminary evidence of the content validity of an item pool (Hinken, 1995). The study’s raters were provided with the dimension descriptions generated by Thatchenkery and Metzker (2006) and asked to indicate with which subscale each item best fit, if any. Items were retained if 90% of the participants assigned the item to its appropriate AIS subscale (Hinken, 1995). Fifty-nine of the original 140 items failed to meet this criterion. Consequently, the new 81-item pool was subsequently provided to participants in order to further refine the construct space.

### Sample

Participants were 209 employed graduate business students at two Northeast universities. Four participants were removed based on incomplete data, leaving a sample of 205. Given that most of our items ultimately had moderate communalities (MacCallum, Widaman, Zhang, & Hong, 1999) and that all of our factors were overdetermined (Velicer & Fava, 1998), this sample size is consistent with recommended estimates that allow a stable interpretation of the results (Fabrigar, Wegener, MacCallum, & Strahan, 1999; MacCallum, Widaman, Zhang, & Hong, 1999; Thompson, 2004). The mean reported age for participants in this sample was 39.32 with a mean tenure of 54.23 months. The sample was approximately 70% female and 67.1% Caucasian, 8.7% African American, 5.8% Latino or Hispanic, 4.8% Asian, 4.3% Middle Eastern, and 9.2%% Pacific Islander, Indian, Native American, or Other.

### Results

**Exploratory factor analysis***.* The study started by conducting a minimum average partial correlation analysis (MAP; Velicer, Eaton, & Fava, 2000) in order to determine the maximum number of factors that it should interpret, rather than relying on more subjective criteria, such as the Kaiser rule or a Scree plot analysis (Fabrigar, et al., 1999). The results of the Velicer’s MAP indicated that six factors should be retained for interpretation. We corroborated these results by conducting a parallel analysis (Hoyle & Duvall, 2004), which also indicated six factors for subsequent analysis.

Next, we performed an EFA using principal axis factoring and a direct oblimin rotation on the item pool and dropped items at this point on the basis of several criteria. Using Tabachnick and Fidell’s (2001) recommendation of .33 as a minimum cutoff for a factor loading, we then removed 14 items for insufficiently loading on any factor, and an additional 19 items for cross-loading on multiple factors. Lastly, we dropped 22 of the remaining items in the interest of parsimony; their item content was redundant due to overlap with other retained items that possessed stronger loadings (Little et al., 1999).

At the conclusion of this process, the study had retained 26 items: five representing positive affect, four representing creativity, seven representing conviction, three representing tolerance for uncertainty, four representing situational awareness, and three representing irrepressible resilience. For conceptual clarity, Table 1 shows the pattern coefficients from the EFA on the retained items. This set of 26 items demonstrated good reliability for the overall AIS (α = .91) and each subscale; positive affect (α = .86), creativity (α = .81), tolerance for uncertainty (α = .80), conviction (α = .80), strategic awareness (α = .82), and irrepressible resilience (α = .79).

**Discussion**

The results of Study 1…

Next, we examine several hypotheses we test after establishing the factor structure of the scale. These hypotheses are designed to provide initial evidence of the convergent, discriminant, and criterion-related validity of the AIS by placing it in a nomological network of individual differences, workplace perceptions, behavioral correlates and important organizational outcomes.

**Study 2**

In Study 2, we expected to find support for the convergent, discriminant, and criterion-related validity of the AIS. Below we outline several specific hypotheses concerning the expected patterns of significant relationships between Appreciative Intelligence® and other important individual differences, such as core self-evaluations, ingenuity and psychological capital. We begin by demonstrating convergent validity, which is contingent on placing the Appreciative Intelligence® construct in a nomological net that relates it to other constructs (Spector, 1992). Judge, Locke, and Durham (1997) introduced the concept of “core self-evaluations” as an integrating personality trait linked to job satisfaction. According to Judge et al., core self- evaluations (CSE) are the fundamental evaluations individuals hold of themselves and others, subconsciously influencing their appraisals of themselves and the world around them. The primary four traits proposed to comprise CSE include: 1) *self-esteem*, which is an individual’s appraisal of their own self-worth; 2) *generalized self-efficacy*, which is a general estimate of one’s ability to perform and cope with in a variety of situations; 3) *emotional stability*, which categorizes one’s tendency to remain calm and less reactive in situations; and 4) *locus of control,* which involves the belief one has about their capacity to impact their environment (Johnson, Rosen, & Levy, 2008). Because this paper proposes that self-efficacy is one factors comprising Appreciative Intelligence®, one can expect to see a relationship between AIS and CSE. Furthermore, subsequent research has also explored other traits that may be associated with CSE. To illustrate, evidence exists that *dispositional optimism* is another indicator of CSE (Judge, Locke, Durham, & Kluger, 1998). Given the alignment between dispositional optimism and the AI factor of positive affect, it is reasonable to anticipate a positive correlation between CSE and AI.

**Hypothesis 1:** The AIS will relate positively to core self-evaluations

Related to the concept of creativity, organizational ingenuity has been conceptualized as “the ability to create innovative solutions within structural constraints using limited resources and imaginative problem solving” (Lampel, Honig, & Drori, 2014, p. 465). Going beyond the concept of merely idea generation, which is often associated with creativity, ingenuity involves applying ideas to solve social and technical problems (Homer-Dixon, 1995). To meet the challenges organizational actors face operating within constraints of their environment, some individuals are able to develop a set of “skills, social tactics, and mental orientation” that is expressed as ingenuity (Lampel, et al., 2014). This paper’s conceptualization of AI includes both creativity and irrepressible resilience, which, it is argued herein, are constructs related to ingenuity. In order to demonstrate ingenuity, one must be able to generate new ideas in a given situation. However, given that ingenuity happens when “actors refuse to abide by constraints, and instead search for solutions” in spite of constraints, (Lampel, et al., 2014, p. 2), ingenuity also relates to resiliency in that challenges are not crippling, but rather a source for creating innovative solutions (Klohnen, 1996).

**Hypothesis 2:** The AIS will relate positively to ingenuity.

Psychological capital (PsyCap) is defined as “an individual’s positive psychological state of development characterized by: 1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at a challenging task; 2) making a positive attribution (optimism) about succeeding now and in the future, 2) persevering toward goals and, when necessary, redirecting paths (hope) in order to succeed, and 4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resiliency) to attain success” (Luthans, Youssef, & Avolio, 2007, p. 3). While these components conceptually overlap, research has shown that together they are synergistic in a way that makes them greater than the sum of their parts (Luthans, Avey, Avolio, Norman, & Combs, 2006) and predictive of job satisfaction and organization commitment (Larson & Luthans, 2006). As noted earlier, this paper’s conceptualization of AI includes characteristics of self-efficacy and irrepressible resilience. Given the convergence of these two characteristics with two dimensions of PsyCap, this study expects to see AIS correlate positively with PsyCap.

**Hypothesis 3:** The AIS will relate positively to psychological capital.

**Discriminant Validity**

Demonstrating discriminant validity involves empirically and conceptually differentiating the Appreciative Intelligence® construct from theoretically unrelated constructs to which it might bear superficial similarity (Spector, 1992). The study identifies the agreeableness dimension of Big 5 and Emotional Intelligence as two measures that should not be related to Appreciative Intelligence® based on past research and our proposed conceptualization of the construct. To test for discriminant validity, we have selected one personality and one intelligence measure. In constructing and validating the STEM and STEU tests of Emotional Intelligence, MacCann and Roberts (2008) argue that tests of Emotional Intelligence should correlate with other intelligence measures in order to be measures of intelligence rather than personality. However, Gardner’s theory of Multiple Intelligences suggests that different kinds of intelligence can be relatively independent of each other, and that whereas some individuals may use a range of intelligences equally, others may ‘spotlight’ particular intelligences while overshadowing others (Gardner & Moran, 2006). Gardner and Moran (2006) also points out that Terman, one of the architects of I.Q. tests, did a 70-year longitudinal study in which children with high I.Q.’s did not exhibit remarkable success. Since Appreciative Intelligence is a decidedly real-world and practical form of intelligence, it would not be expected to have significant correlations with I.Q. Gardner’s multiple intelligences model replaces the notion of a global construct or measure of intelligence with the recognition of distinct forms of intelligence.

Likewise, Emotional Intelligence is a distinct form of intelligence from Appreciative Intelligence®. The factors that, prima facie, would seem most overlapping between the two constructs would be the Appreciative Intelligence® factors of “positive affect” and “strategic awareness” with the Emotional Intelligence dimensions of: “the integration of emotions into thought processes”, “understanding the relations between, and transitions among, emotions and between emotions and circumstances”, and “the management of emotions to moderate negative, and enhance positive, emotions” (MacCann & Roberts, 2008, p. 540).

However, a closer look at the items contained in the AI factors of “positive affect” and “situational awareness” reveal why these are not related to Emotional Intelligence. Positive affect is about the ability to access positive affect *regardless* of the situational inner or outer emotional backdrop – for example, as expressed by the phrases: “I am able to look on the bright side of life”; “It’s easy for me to be happy”; “I see positive possibilities embedded in everyday life”. – whereas Emotional Intelligence is about tuning into and responding to the operative emotional backdrop. The “situational awareness” factor in AI is focused on strategic rather than emotionally responsive understanding, and at the level of larger organizational or community realities versus direct interpersonal relationships – as shown in the phrases “I understand how my decisions might impact other departments, the organization, and the local community”; I can identify who are the most appropriate people to influence in order to achieve an objective.”

The personality dimension of “agreeableness” from the Big 5 could also superficially seem related to Appreciative Intelligence®, but is in fact conceptually distinct. High scores on agreeableness can suggest a need to please, while low scores can reflect a selfish focus on one’s goals. Items include: “Tends to find fault with others”; “Is considerate and kind to almost everyone”; “Is cold and aloof”; “Is generally trusting” (Chiorri, Marsh, Ubbiali, & Donati*.* 2016, p. 93). Appreciative Intelligence® focuses on resilience and the capacity to see potential in and make the most of a situation, while maintaining *intra*personal optimism, whereas Agreeableness is focused on the quality of interpersonal relating.

Rather than posing null hypotheses that we cannot adequately test, Bagozzi, Yi, and Phillips (1991) suggested that discriminant validity hypotheses should be tested with nested models using structural equation modeling. Specifically, their technique involves comparing the difference in chi-square between two models, one in which the covariance between the two constructs is fixed to one (i.e., the constructs are treated as unitary), and the other in which the covariance is freely estimated (i.e., the constructs are treated as distinct). If the model with the freely estimated covariance yields significantly better fit to the data than the model in which the constructs are constrained to be unitary, the results indicate that the constructs are discriminant. Accordingly, our discriminant validity hypotheses are phrased in terms of differences in model fit that we expect based on utilizing Bagozzi et al.’s (1991) technique. This approach resulted in the following hypotheses:

**Hypothesis 4:** A model in which Appreciative Intelligence® and emotional Intelligence are allowed to covary freely (e.g., their covariance is freely estimated) will display significantly better fit than a model in which Appreciative Intelligence® and emotional intelligence are fixed to be unitary (e.g., the covariance between the constructs is fixed to one).

**Hypothesis 5**: A model in which Appreciative Intelligence® and agreeableness are allowed to covary freely (e.g., covariance between the constructs is freely estimated) will display significantly better fit than a model in which Appreciative Intelligence® and agreeableness are fixed to be unitary (covariance between the constructs is fixed to one).

**Criterion-Related Validity**

Although we see a wide variety of outcomes potentially related to Appreciative Intelligence®, we use Griffin, Neal, & Parker’s (2007) measure of proactive work role behaviors to demonstrate the criterion-related validity of the AIS. By convention, work roles reflect performance requirements meant to influence the organization's overall effectiveness. The need for contemporary organizations to remain relevant depends, in large part, on how it reacts to the dynamic challenges and uncertainties faced by modern businesses. In response to changing conditions and demands, work roles, by necessity, must change as well (Katz & Kahn, 1978; Sonnentag & Frese, 2002. Motivation scholars have argued that various forms of proactive behaviors (e.g., career planning, information seeking, and assuming control) all involve self-initiated and future-focused efforts by employees to catalyze change without requiring explicit direction from supervision (Frese & Fay, 2001; Parker, Williams, & Turner, 2006). As such, employee proactivity is conceived of as a process in which employees generate and implement, under their own instruction, a proactive goal to affect an alternative future (Bindl, Parker, Totterdell, & Hagger-Johnson, 2012; Frese & Fay, 2001; Grant & Ashford, 2008).

As conceptualized, different forms of role behavior are required to perform most effectively in dynamic contexts. Proficiency describes the extent to which an individual meets the formal requirements of his or her role. Adaptivity describes the extent to which an individual adapts to changes in work systems or roles. Lastly, proactivity describes the extent to which an individual takes self-directed action to anticipate or initiate change in work systems or roles. Adaptivity and proactivity are important forms of behavior when there is uncertainty in inputs, processes or outputs, because it is difficult to formalize the requirements of work roles under these circumstances.

Proactive behavior has been related to a variety of motivation-related variables including psychological empowerment (Hon, 2007), role breadth self-efficacy (Parker et al., 2006), and entrepreneurial orientation (e.g., Becherer & Mauer, 1999; Crant, 1996; Kickul & Zaper, 2000). More germane to the current study, proactive behaviors have been linked to flexible role orientation (Parker, Wall, & Jackson, 1997), one’s concern with the breadth of one’s experienced responsibility, or “how far one’s ‘psychological’ role extends beyond achieving basic technical goals” (Parker et al., 2006, p. 639). Employees with a flexible role orientation broadly define their roles, feel ownership of goals which they view as part of their job (Parker et al., 1997) and are more likely to engage in proactive work behavior (Parker et al., 2006).

Research by Griffin, Neal, and Parker (2007) differentiated proactive behavior based on the level in the organization to which an individual directs his/her proactive efforts. In brief, they specified the extent to which individuals engage in self-starting, future-oriented behavior relevant to: their individual work situations or roles (individual task proactivity); to a team’s situation and processes (team member proactivity); and to their organization and/or the way the organization works (organization member proactivity). Although different types of proactivity have their own meanings, they are also positively and moderately related to each other, suggesting that different forms of proactive behavior share the same common base of proactivity, and supporting the conceptualization of proactive behavior as one overarching concept.

Parker et al. (2010) proposed three common motivational mechanisms in triggering proactive behavior. Prior to enacting proactive behavior, individuals will consider whether they a) feel capable of enacting change, b) whether they want to bring about a different future, and c) the extent to which they experience positive affect that fosters proactive actions. These mechanisms have been empirically supported in studies using different forms of proactive behavior (e.g., Bindl, Parker, Totterdell, & Hagger-Johnson,2012; Den Hartog & Belschak, 2007; Parker et al., 2006).

We expect AI to occupy an important role in triggering proactive behavior because, according to goal-regulatory perspective (see Parker et al., 2010), effective proactive behavior derives from envisioning a different future and actively considering new pathways to a future-oriented goal. As noted by Frese and Fay (2001), proactive behavior is not the application of a standard procedure; rather it embodies activities that require effortful cognition in the generation of new ideas and envisioning a different future.

As conceptualized, those with high levels of Appreciative Intelligence® characteristically seek out opportunities and show initiative in bringing about meaningful change. Appreciative Intelligence® compels not only proficiency in core task elements but also a proclivity to monitor the workplace milieu for potential positive adaptations and initiate such changes in the name of increased organizational efficiency. Because Appreciative Intelligence® is thought to foster a wider climate of positivity and resilience (Thatchenkery & Metzker, 2006), and because the various forms of proactive behavior share a broad common source for motivation (Griffin, Neal, & Parker, 2007), this paper argues that change opportunity recognition likely occurs at all levels of proactive behavior, catalyzing changes within individuals’ roles as well as at the team and organizational level. Thus, we hypothesize the following:

**Hypothesis 6:** The AIS will relate positively individual task proactivity.

**Hypothesis 7:** The AIS will relate positively to team member proactivity.

**Hypothesis 8:** The AIS will relate positively to organizational member proactivity.

### STUDY 2

**Method**

Study 2 was conducted to confirm the factor structure found in Study 1 and to provide evidence for convergent, discriminant, and criterion-related validity. Participants completed the 26-item AIS in the context of a broader survey of self-report scales. Additionally, we gathered data on individual, team, and organizational task proactivity from a separate survey given to participants’ supervisors.

### Sample

For Study 2, we gathered data from a separate sample of 256 employed graduate business students at three universities; two in the Northeast and one in the Southeast. The mean age of the subordinate participants was 30.14 with an average tenure of approximately 36.31 months. The sample was 60.5% female and 64.1% Caucasian, 16% Asian, 5.9% African American, 4.7% Latino or Hispanic, and 9.3% Other (Middle Eastern, Native American, Pacific Islander, or other). The supervisor respondents had a mean age of 37.27 years, with a mean tenure of 51.72. Further, the supervisor sample was 55.2% female and 69.5% Caucasian, 9.5% African American, 8.6% Asian American, 5.7% Hispanic, and 6.7% Other (Middle Eastern, Native America, Pacific Islander, or other).

In order to test the study’s hypotheses while minimizing the effects of mono-source bias, participants’ supervisors were contacted via email and surveyed regarding the proactive performance of their subordinate. One hundred and five supervisors returned the survey, yielding a response rate of 41%. A series of subsequent one-way ANOVAs indicated no significant differences in any of the self-report variables when comparing the group of participants whose supervisors returned their survey to the group of participants whose supervisors did not respond

### Measures

Unless otherwise noted, all responses were made on a 5-point Likert scale ranging from strongly agree to strongly disagree.

**Convergent validity measure***.* The study measures Core Self-Evaluations with the Core Self-Evaluation Scale (CSES) developed by Judge et al. (2003). This 12-item measure (α =.85) assesses the four components of self-esteem, self-efficacy, neuroticism, and locus of control. A sample item reads “I am confident I get the success I deserve”.

Using the nine-item Ingenuity subscale (α =.92) from the Openness to Experience scale developed by (Woo, Chernyshenko, Longley, Zhang, Chiu, & Stark, 2013), we assessed Ingenuity. A sample item reads “I am confident I get the success I deserve”.

Psychological capital was measured with the 12-item version (α =.86) of the Psychological Capital Questionnaire (PCQ) (Luthans, Youssef, & Avolio, 2007). The PCQ-12 assesses four components of efficacy (originally adapted from Parker, 1998), hope (originally adapted from Snyder et al., 1996), resilience (originally adapted from Wagnild & Young, 1993), and optimism (originally adapted from Scheier & Carver, 1985). A sample item from this scale reads: “I feel confident in representing my work ideas in meetings with management”

**Discriminant validity measures.**  The study measures Emotional Intelligence with the Situational Test of Emotion Management (STEM) (MacCann & Roberts, 2008), an 18-item (α =.71) situational judgment test of emotional intelligence designed to assess three dimensions relevant to emotional intelligence: utilizing own emotion, sensing other's emotion and understanding emotional context. For the test, participants are asked to choose which of four response options would be the most effective course of action to take in emotionally charged situations. A sample item, along with its response options, reads: Pete has specific skills that his workmates do not, and he feels that his workload is higher because of it. What action would be the most effective for Pete? (a) Speak to his boss about this, (b) Start looking for a new job, (c) Be very proud of his unique skills, or (d) Speak to his workmates about this.

We measured Agreeableness using the agreeableness subscale of the Ten Item Personality Inventory (Gosling, Rentfrow, & Swann, 2003; Hofmans, Kuppens, & Allik, 2008), a two-item measure (α =.72) that asks participants to rate the extent to which agreeable tendencies (e.g., being warm and sympathetic) applies to them.

 **Criterion-related validity measures.** The study assessed individual, team, and organizational proactivity using Griffin, Neal, and Parker’s (2007) measure of positive work role behaviors. Supervisor participants were asked to describe how often in the past six months focal subordinates had actively initiated change to core job responsibilities. Each construct was measured using 3 items and responses ranged from 1 (*very little*) to 5 (*a great deal*). A sample item from the individual task proactivity subscale (α =.82) reads “Initiated better ways of doing his/her core tasks”; a sample item from the team task proactivity (α =.80) subscale reads “Developed new and improved methods to help his/her work unit perform better.”; a sample item from the organizational task proactivity subscale reads “Involved him/herself in changes that are helping to improve the overall effectiveness of the organization.”

### Results

**HCFA***.* A hierarchical CFA was conducted to cross-validate the six-factor structure that emerged from Study 1. As shown in Figure 1, Appreciative Intelligence® is conceptualized as a higher-order latent variable that shapes these characteristics. Consistent with the criteria established by MacKenzie, Podsakoff, and Jarvis (2005), we have treated this dimensional structure as a latent variable model with effects indicators (i.e., with arrows flowing from the construct to the indicators) rather than an aggregate or manifest variable model (i.e., with arrows flowing from the indicators to the construct). Specifically, because these dimensions are seen as manifestations of Appreciative Intelligence® that are likely to be highly correlated and share similar relationships with antecedents and consequences, a latent variable structure fits better with the our theoretical approach, rather than an aggregate variable model.

Mplus version 7.4 (Muthén & Muthén, 2015) was employed to validate the hypothesized model. We compared the fit of the *a priori* theoretical model to several alternative models to provide further evidence of discriminant validity (Lance & Vandenberg, 2002). Specifically, we tested three models; a common factor model, in which all items loaded on a single latent construct; a six-factor model, in which the *a priori* AI latent constructs were allowed to freely covary; and the study’s *a priori*, hierarchical model, in which the superordinate AI construct affects the six-dimension constructs. The hierarchical model was specified to freely estimate the loadings of all six dimensions, which necessitated setting the variance of the second-order AI latent variable to one to identify the model (Kline, 2005).

The results of these analyses are shown in Table 2. The six-factor model and the *a priori*, hierarchical model both displayed significantly better fit to the data than either the common factor model. A chi-square difference test indicates that the six-factor model and the hierarchical model fit equally well (Δχ2(2) = 4.63, *ns*), with no appreciable changes in any other fit indices. While the hierarchical model is less parsimonious with fewer degrees of freedom, when researchers have a strong theoretical reason to expect a hierarchical structure, the appropriate model for the data requires estimating more parameters (e.g., Mulaik, 1998). Based on our conceptualization of AI as embodying a hierarchical structure, we argue that our results are supportive of the more restrictive *a priori* model. Consistent with Kline (2005), the fit indices indicate a good fit to the data (χ2(241) = 251.24, p < .01; CFI = .93; RMSEA = .07; SRMR =.07). Figure 2 shows the results of this model with all path coefficients.

**Convergent validity hypotheses***.* Table 3 presents the internal consistency and correlations for all study variables, and Table 4 shows the results of our hierarchical regression analyses pertaining to convergent validity hypotheses. As shown in Table 4, we first controlled for the effects of gender, ethnicity, and age prior to regressing the dependent variable on AI for all analyses.

Hypothesis 1 stated that the AIS should relate to core self-evaluations. This hypothesis was supported (β = .36, *p* < .01) explaining an additional 19% of the variance in core self-evaluations over and above the demographic control variables. Similarly, Hypothesis 2 stated that AI would be positively related to ingenuity. As indicated in Table 4, the relationship between AI and ingenuity was significant and positive (β =.23, *p* < 01.). Lastly, the we also found support for Hypothesis 3, which stated that psychological capital would relate positively with AI (β= .39, *p* < .01).

**Discriminant validity hypotheses**. We choose to demonstrate discriminant validity using Bagozzi, Yi,and Phillips’ (1991) method of comparing nested models. Hypothesis 4 stated that AI would be discriminant from emotional intelligence. Inspection of Table 5 supports this hypothesis as the model with a freely estimated covariance between AI and emotional intelligence fit significantly better than the model wherein this covariance was fixed to one (2 (1) = 13.06, *p* < .001). To supplement these analyses, we calculated the average variance extracted (AVE) for both AI and emotional intelligence. Evidence of discriminant validity is present when the AVE of both constructs is greater than the shared variance (i.e., the squared correlation) between constructs (Fornell & Larcker, 1981). AVE values were .52 for AI and .33 for emotional intelligence, whereas the squared correlation between AI and emotional intelligence was .02, thereby providing strong evidence of distinctiveness of these two scales.

Similarly, Hypothesis 5 stated that the AIS would be discriminant from agreeableness. In accordance with our expectations, the model with a free covariance fit significantly better (2 (1) = 10.27, *p* < .001). Further, the squared inter-correlation between AIS and agreeableness was .07, lower than AVE values for either dimension (.52 and .45, respectively), supporting Hypothesis 5. Thus, both discriminant validity hypotheses were supported, indicating that Appreciative Intelligence® is distinct from emotional intelligence and agreeableness, respectively. Additionally, as noted in the initial HCFA, the a priori model displayed better fit than a null model and a common factor model, providing further support for discriminant validity (Lance & Vandenberg, 2002).

**Criterion-related validity hypotheses***.* Table 6 shows the results of the study’s tests of criterion-related validity. Hypothesis 6 predicted that the AIS total score would be positively related to supervisor reports of individual task proactivity. Table 6 indicates that Hypothesis 6 was supported (β = .58, *p* < .01). Hypothesis 7 stated that the AIS total score would be positively related to supervisor reports of team member proactivity. As shown in Table 6, the relationship between AI and team member proactivity attained statistical significance (β =.52, *p* < .01). Hypothesis 8 predicted that the AIS score would positively relate to supervisor reports of organizational member proactivity. This relationship is supported (β = .44, *p* < 01*.*), explaining an additional 7% of the variance over the demographic control variables.

**Discussion**

In summary, the purpose of this study is to advocate for the importance of Appreciative Intelligence® for management research and develop and validate a new measure of Appreciative Intelligence®, the Appreciative Intelligence® Scale, to facilitate future research. Consistent with its conceptualization, the study’s results support a hierarchical, six-factor structure. Additionally, its validation results demonstrate that the proposed new measure of AI is similar to, yet distinct from, related constructs including core self-evaluations, ingenuity, and psychological capital – and is also different from conceptually distinct discriminant variables including agreeableness and emotional intelligence. The findings herein are noteworthy in that the scale was validated against a robust combination of self-report measures and supervisor ratings. As such, the AIS shows considerable promise for use in both research and applied settings.

 The tests of criterion-related validity in Table 6 indicate that the AIS explained between 7% and 14% of the variance in the criteria over and above the demographic control variables. Although the magnitude of these variances is not large, these findings are practically meaningful to organizations. For example, research with service employees has shown that higher levels of engagement correlate with higher daily financial returns by the respective employee (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009). Furthermore, studies have also shown that proactivity is also predictive of employees’ career success, being positively associated with both objective (salary and promotion) measures, as well as subjective (career satisfaction) measures (Seibert, Crant, & Kraimer, 1999). Thus, providing organizations with the means to predict even small percentages of the variance in these criteria yields important financial and employee-related results.

**General Discussion**

Our results indicate that AI as measured by the AIS is an important construct in applied work settings.Perhaps the study’s most compelling finding was that AI predicted proactive behaviors aimed at improving organizational processes and outcomes. Organizational member proactivity includes behaviors meant to increase efficiency and effectiveness across units and levels, for example, suggesting modifications to administrative activities. Overall, proactive behaviors are likely to translate into increased individual and organizational performance, positive individual employee-related career-related outcomes, sales, and overall organizational success (Fay & Frese, 2001; Parker, Williams, & Turner, 2006; Raabe, Frese, & Beehr, 2007). Furthermore, in today’s increasingly dynamic work environment, where the organizational landscape is ever-changing, employees need to adapt more readily and willingly in order to approach challenges in a proactive manner – rather than to fulfill their job descriptions with passivity (Swan & Fox, 2009). In summary, AIS has the potential to help identify employees especially likely to take actions that will be benefit the employees and the overall organization with positive financial and social benefits in the workplace.

The research also indicates that those with high levels of AI are prone to higher levels of core self-evaluations and psychological capital. These relationships may have a variety of implications for practitioners, particularly as core self-evaluation has been associated with better job performance, increased job satisfaction, lower stress and conflict, the ability to overcome setbacks and capitalize on opportunities (Judge, 2009). Psychological capital has also been identified as an antecedent in models of job satisfaction and performance (Newman, Ucbassaran, Zhu, & Hirst, 2014). Applied to the workplace, the study’s research that those with high levels of AI tend to be higher in core self-evaluations and psychological capital, suggests these persons may be especially prone to be more effective employees who are more satisfied and productive at work.

**Limitations**

We see the potential for new AIS research contributing to the literature in a wide variety of settings, such as health care and patient/doctor restructuring, industrial and technology corridor development expansion, public education reform and improvements and prison reform and prisoner recidivism. The findings articulated by this paper suggest that the AIS is a useful tool for future research. However, this study does have specific limitations to acknowledge. One limitation is the use of a student sample, which may limit generalizability. However, as noted earlier, the construct development and validation samples were composed of older student employees with significant work experience; the mean age of the subordinates was 29.32 and 30.14 years, respectively, with an average tenure of approximately 34.23 and 36.31 months, respectively. The profile suggests the sample is more akin to working population, rather than a typical student sample and more.

 Second, Table 3 indicates that some of the paper’s scales had internal consistency reliabilities in the .70s (e.g., emotional intelligence at .71 and agreeableness at .72). Although Nunnally’s (1978) guideline of .70 is conventionally recommended in the literature as an acceptable reliability, as Lance, Butts, and Michels (2006) noted, Nunnally actually recommended internal consistencies of at least .80 for applied research. Thus, while we do not think the constructs were measured at an unacceptable level of reliability, we recommend that other researchers reexamine these relationships in future studies to confirm its results.

Finally, another potential limitation of this study involves our decision to specify the AI variable as a latent construct. As noted, earlier the writers selected a latent variable structure instead of an aggregate variable structure because we anticipated the AI dimensions to be highly interrelated (Edwards, 2003; MacKenzie et al., 2005). Although this paper argues that a latent variable structure is most consistent with the theory discussed herein, future researchers may want to explore tests of the measure as an aggregate variable due to conflicting criteria.

Appreciative Intelligence® is a unique and underrepresented construct in the literature of positive psychology. Herein we have contributed to the advancement in the corpus of literature about AIS by developing a valid and useful scale for its measurement. This paper’s further examination of its role as an important antecedent to organizational outcomes helps practitioners and researchers predict, influences proactive behaviors and employee performance and encourages more sound theoretical research like it.

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Figure 1: *Hierarchical Factor Structure of the Appreciative Intelligence® Construct*

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Figure 2: Results of Hierarchical Confirmatory Factor Analysis of Appreciative Intelligence® Scale Items



TABLE 1: *Exploratory Factor Analysis Pattern Coefficients on Retained AIS items a*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Item | PA | Creat-vity | TU | Convic-tion | SA | IR |
|  |  |  |  |  |  |  |
| 1. I am able to look on the bright side of life.
 | **0.87** | 0.01 | -0.01 | -0.04 | 0.01 | -0.08 |
| 1. I have a positive attitude.
 | **0.85** | 0.00 | 0.00 | -0.01 | -0.02 | -0.07 |
| 1. It’s easy for me to be happy.
 | **0.79** | -0.06 | 0.06 | -0.05 | -0.03 | -0.04 |
| 1. I see positive possibilities embedded in everyday life.
 | **0.61** | 0.02 | -0.06 | 0.14 | 0.01 | 0.06 |
| 1. I tend to see the glass half full instead of half empty.
 | **0.55** | 0.02 | -0.09 | 0.11 | 0.09 | 0.12 |
| 1. My friends would describe me as having a vivid imagination.
 | 0.12 | **0.63** | -0.04 | -0.11 | -0.17 | -0.01 |
| 1. I often think of possibilities that others do not.
 | -0.02 | **0.79** | 0.05 | 0.06 | 0.00 | -0.06 |
| 1. I do well with assignments that require unconventional problem solving.
 | 0.08 | **0.67** | -0.02 | 0.05 | 0.27 | -0.06 |
| 1. I come up with original ideas that others have not thought about before.
 | -0.13 | **0.75** | -0.10 | 0.09 | 0.09 | -0.08 |
| 1. I feel stressed in situations where I am unsure what is going on.
 | 0.09 | 0.00 | **-0.68** | -0.03 | 0.15 | -0.18 |
| 1. I don't mind taking reasonable risks.
 | -0.02 | 0.06 | **0.55** | 0.05 | 0.10 | 0.00 |
| 1. I feel more comfortable when there are rules and procedures to follow.
 | -0.03 | 0.14 | **-0.64** | -0.07 | 0.05 | 0.09 |
| 1. I have faith in my capacity to overcome challenges.
 | 0.18 | 0.16 | -0.03 | **0.57** | -0.02 | 0.14 |
| 1. I know I can accomplish a task when I put my mind to it.
 | 0.14 | 0.19 | -0.05 | **0.72** | -0.10 | 0.10 |
| 1. If I try hard enough, I know I will achieve my goals.
 | -0.01 | -0.01 | 0.03 | **0.47** | -0.13 | -0.28 |
| 1. I am convinced that I can accomplish a task when I focus on it.
 | 0.00 | 0.02 | -0.10 | **0.51** | 0.18 | 0.05 |
| 1. I usually achieve the goals I set.
 | 0.04 | 0.01 | -0.05 | **0.54** | -0.03 | -0.25 |
| 1. When things are not working out, I give up easily.
 | 0.02 | -0.12 | 0.00 | **-0.34** | 0.24 | -0.12 |
| 1. I have little difficulty achieving goals that I have set for myself.
 | 0.02 | -0.04 | -0.07 | **0.57** | -0.02 | -0.02 |
| 1. I understand how my decisions might impact other departments, the organization, and the local community.
 | 0.04 | 0.02 | 0.06 | 0.14 | **0.61** | -0.02 |
| 1. I anticipate how people in other positions in the organization may react to my decisions.
 | -0.04 | 0.04 | 0.03 | -0.06 | **0.79** | -0.04 |
| 1. I can identify who are the most appropriate people to influence in order to achieve an objective.
 | 0.06 | -0.01 | 0.08 | -0.05 | **0.73** | -0.03 |
| 1. I understand the wider implications of promoting a particular agenda in my organization.
 | -0.03 | -0.05 | 0.00 | 0.05 | **0.77** | 0.01 |
| 1. I cope very well with unexpected difficulties.
 | 0.20 | 0.10 | -0.06 | 0.16 | 0.30 | **0.39** |
| 1. Obstacles energize me to work harder in order to attain an objective.
 | 0.15 | 0.08 | -0.19 | 0.00 | 0.12 | **0.62** |
| 1. I tend to flourish when dealing with the pressure created by serious, unexpected problems.
 | 0.03 | 0.22 | -0.09 | 0.02 | 0.03 | **0.65** |
|  |  |  |  |  |  |  |
| Post-rotation eigenvalues for retained items | 7.19 | 2.50 | 2.26 | 1.73 | 1.46 | 1.15 |
| Percentage of variance explained for retained items (post-rotation) | 27.68 | 9.62 | 8.70 | 6.68 | 5.52 | 4.42 |
| Final Cronbach alpha reliabilities for retained items | .86 |  .81 |  .80 | .80 | .82 | .79 |
| Final Cronbach alpha reliability for overall AIS  | .91 |  |  |  |  |  |

Note: Primary factor coefficients in bold. AIS – Appreciative Intelligence Scale®. a N = 204.

TABLE 2: *Fit Indices for Tests of Discriminant Validity*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Model | χ2 | *df* | SRMR | RMSEA | CFI | Δχ2 | Δ *df* |
| Common Factor Model | 901.31\*\* | 252 | .19 | .24 | .51 | 1020.22\*\* | - |
| Six-Factor Model | 289.57\*\* | 243 | .07 | .08 | .93 | 611.74\*\* | 9 |
| Hierarchical Model | 284.94\*\* | 241 | .07 | .07 | .93 |  4.63 | 2 |

*Note*. SRMR = standardized root mean square residual; RMSEA= root mean square error of approximation; CFI = comparative fit index. \*\**p* < .01.

TABLE 3: *Means*, *Standard Deviations, and Correlations of all Variables*

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Study Variables | Mean | SD |  1 |  2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |  |
| 1. Appreciative Intelligence® | 3.57 | 0.51 | (.91) |  |  |  |  |  |  |  |  |  |
| 2. Core Self-Evaluations | 3.06 | 0.40 | .48\*\* | (.85) |  |  |  |  |  |  |  |  |
| 3. Ingenuity | 3.10 | 0.51 | .22\*\* | .45\*\* | (.92) |  |  |  |  |  |  |
| 4. Psychological Capital | 3.40 | 0.65 | .30\*\* | .26\*\* | .24\*\* | (.86) |  |  |  |  |  |
| 5. Emotional Intelligence | 0.64 | 0.11 | .11 | .12 | -.12 | .09 | (.71) |  |  |  |  |
| 6. Agreeableness | 2.96 | 0.86 | -.26\*\* | .00 | .08 | .01 | -.06 | (.72) |  |  |  |  |
| 7. Individual Proactivity | 4.41 | 0.87 | .36\*\* | .14 | .08 | -.03 | .28\* | -.06 | (.82) |  |  |
| 8. Team Proactivity | 4.50 | 0.87 | .34\*\* | .08 | -.09 | .13 | .15 | .12 | .43\*\* | (.80) |  |
| 9. Organizational Proactivity | 4.40 | 0.97 | .25\*\* | .35\* | -.09 | .30\* | .19 | .14 | .33\* |  .46\*\* | (.83) |

*Note*: Reliabilities reported in parentheses. \* *p* < .05, \*\* *p* < .01. All tests are two-tailed.

TABLE 4: *Results of Hierarchical Regression Analysis for Convergent Validity*

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | **Dependent Variable** |
|  |  |  | Core Self-Evaluations |
| Hypothesis 1 | Step | Variable | β | *R*2 | Δ*R*2 |
|  | Block 1 | Gender  | .04 |  |  |
|  |  | Ethnicity | .01\* |  |  |
|  |  | Age | .01 | .06 |  |
|  | Block 2 | AI | .36\*\* | .25 | .19 |
|  |  |  |  Ingenuity |
| Hypothesis 2 | Step | Variable | β | *R*2 | Δ*R*2 |
|  | Block 1 | Gender  | -.01 |  |  |
|  |  | Ethnicity | .01 |  |  |
|  |  | Age | .00 | .00 |  |
|  | Block 2 | AI | .23\*\* | .05 | .05 |
|  |  |  | Psychological Capital |
| Hypothesis 3 | Step | Variable | β | *R*2 | Δ*R*2 |
|  | Block 1 | Gender  | .09 |  |  |
|  |  | Ethnicity | -.01 |  |  |
|  |  | Age | .01 | .03 |  |
|  | Block 2 | AI |  .39\*\* | .11 | .08 |

Note. \*\**p* < .01, \**p* < .05, † *p* <.10.

TABLE 5: *Fit Indices for Tests of Discriminant Validity*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hypothesis | Model | χ2 | *df* | SRMSR | RMSEA | CFI | Δχ2 | Δ *df* |
| Hypothesis 4 | Unitary | 384.61 | 237 | .14 | .11 | .81 |  |  |
|  | Discriminant | 371.55 | 236 | .09 | .11 | .87 | 13.06\*\*\* | 1 |
| Hypothesis 5 | Unitary | 183.28 | 237 | .18 | .14 | .77 |  |  |
|  | Discriminant | 173.01 | 236 | .10 | .13 | .80 | 10.27\*\*\* | 1 |
| *\*\*\*p* < .01. |  |  |  |  |  |  |  |  |

TABLE 6: *Results of Hierarchical Regression Analysis for Criterion-Related Validity*

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | **Dependent Variable** |
|  |  |  | Individual Task Proactivity |
| Hypothesis 6 | Step | Variable | β | *R*2 | Δ*R*2 |
|  | Block 1 | Gender  | .16 |  |  |
|  |  | Ethnicity | -.03 |  |  |
|  |  | Age | .02 | .01 |  |
|  | Block 2 | AI | .58\*\* | .14 | .13 |
|  |  |  | Team Member Proactivity |
| Hypothesis 7 | Step | Variable | β | *R*2 | Δ*R*2 |
|  | Block 1 | Gender  | -.04 |  |  |
|  |  | Ethnicity | .00 |  |  |
|  |  | Age | .01 | .01 |  |
|  | Block 2 | AI | .52\*\* | .11 | .10 |
|  |  |  |  Organizational Member Proactivity |
| Hypothesis 8 | Step | Variable | β | *R*2 | Δ*R*2 |
|  | Block 1 | Gender  | .09 |  |  |
|  |  | Ethnicity | -.05 |  |  |
|  |  | Age | .01 |  .01 |  |
|  | Block 2 | AI | .44\*\* | .08 | .07 |