

Promoting Adaptive Performance: Validating a Measure of Adaptive Performance Using
an In-Basket and a Situational Judgement Test

by

Emilie Seyfang

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Thesis Committee:

Dr. Mark Frame, Chair

Dr. Michael Hein

Dr. Glenn Littlepage

Dr. Alexander Jackson

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ABSTRACT

The need for employees to successfully alter their behavior to match the needs of the changing work environment is more important than ever before. Prior research rests on the idea that adaptive performance (AP) leads to positive outcomes for both employees and organizations yet little research has examined how AP relates to performance on assessments and tests. The current study examines the relationship between AP using an in-basket, SJT and two measure of AP. The Measure of Adaptive Performance (MAP) and the I-ADAPT were utilized to examine the performance of 270 Troopers and 75 Sergeants in a state highway patrol agency.

The outcomes of this study showed high correlations between the dimensions on the MAP and I-ADAPT leading to the conclusion that they are measuring similar constructs. Further regression analyses suggest that certain dimensions of AP can successfully predict performance on an SJT but did not predict for performance on an in-basket. Additional research is suggested to more fully understand these findings.

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CHAPTER I: INTRODUCTION AND LITERATURE REVIEW

Background

The selection and development of an adaptive workforce is a concern in today's turbulent work environment. Much of the research regarding Adaptive Performance (AP) provides information about individual predictors and antecedents of AP (Charbonnier-Voirin & Roussel, 2012; Good, 2014; Jundt, Shoss, & Huang, 2015; Marques-Quinteiro & Curral, 2012). However, insufficient research has examined the criterion related validity of AP. The current knowledge of AP rests upon the notion that AP leads to positive outcomes for individuals and the organization (Shoss, Witt, & Vera, 2012). Alas, not much is known regarding the outcomes of AP both on the individual level as well as the organizational level. Allworth and Hesketh (1999) examined the predictor-performance relationship and found partial support for the hypothesis that change-related biodata and cognitive ability would predict AP. Stokes, Schneider, and Lyons (2009) pointed out that as a result of the limited research on AP as a construct, researchers should use caution when attempting to generalize across criterion measurement methods. Shoss, Witt, and Vera (2012) sought to further the research by examining the conditions under which AP leads to desired outcomes. According to their findings, AP is positively related to task performance. This relationship was moderated by perceptions of organizational politics and conscientiousness, such that a positive relationship existed when high conscientious employees reported high levels of organizational politics. Due to the scarcity of research examining the consequences of AP, the present study aims to uncover the implications that AP has on situational judgement tests (SJT) and in-baskets.

There have been a variety of studies conducted on the ability of the situational judgement test (SJT) and in-basket assessment to examine how individuals will handle situations, yet no study has examined the relationship between performance on these assessment center techniques and (AP).

What is Adaptive Performance?

While the importance of AP has been noted by many (Pulakos, Schmitt, & Dorsey, 2000; Jundt, Shoss & Huang, 2015; Griffin & Hesketh, 2003), it is challenging to find a consistent definition (Bliese, 2009; Shoss, Witt & Vera, 2012). AP has been described as a *willingness* to change behavior (Cronshaw & Jethmalani, 2005), and it has been used to refer to an individual's *persistence* to reach a goal or letting it go when it is realized that the goal is unattainable (Sandelands, Brockner, & Glynn, 1998). To make matters more confusing, the study of AP has been fragmented due to the wide range of terms used when discussing it. The terms *adaptation*, *adaptive expertise* and *adaptive transfer*, to name a few, have been used interchangeably in the AP literature (Jundt, Shoss, & Huang, 2015). Most commonly, AP is the proficiency in which an individual can change his or her behaviors in order to successfully maintain performance in a changing environment (Pulakos et al., 2000). Griffin and Hesketh (2003) propose that AP yields improved interactions between an individual and the environment through either the individual changing the environment or the individual changing himself or herself to fit the environment.

Griffin and Hesketh (2003) proposed three separate facets of AP. The first facet is proactive behavior which is behavior that deals with an individual's ability to identify and then implement a change that has a positive impact on the environment. An example

could include employing a new method for building a computer that is more efficient and effective than the previous method for building a computer. Another facet of AP involves reactive behaviors in which an individual modifies his or her behavior to better suit the fluctuating environment. An example of this could include when a new software comes out and an employee signs up for a training class to learn about the new software.

Finally, Griffin and Hesketh (2003) identify tolerant behavior as the third facet of AP.

Unlike proactive and reactive behaviors, tolerant behavior is the ability to function within the changing environment when both proactive and reactive behaviors are not appropriate.

For the purposes of this paper, AP will be defined as “task-performance-directed behaviors individuals enact in response to or anticipation of changes relevant to job related tasks” (Jundt, Shoss & Huang, 2015, p. 2-3). Jundt et al. (2015) identified four main components of AP in their definition. First, AP must be a response or an adjustment of behavior due to a change that has either occurred or is expected to occur. Secondly, the reason for this change in behavior is to decrease the negative impact that a change can have on an individual’s performance. Third, as mentioned above, this type of performance has both proactive and reactive elements. In other words, an individual can begin to learn a new skill before a change in the environment actually occurs or an individual can learn a new skill in response to a change that is already taking place. Lastly, adaptation can occur because of a singular change in the employee’s job or because of a change within the broader organization (Jundt, Shoss & Huang, 2015).

Research Archetypes

The method for studying AP has taken a number of diverse paths. A plethora of researchers have examined AP at the individual, team, and organizational level. Baard, Rensch, and Kozlowski (2014) identify two main perspectives that researchers have taken when studying AP (see Figure 1). The Domain-General perspective views AP as a performance construct. Empirical research based on the Domain-General perspective has focused on establishing construct validity of measures of AP. This research has helped to show that AP is a separate dimension from task and contextual performance. Additionally, within the Domain-General perspective is the individual difference approach. This approach takes the stance that AP is a set of traits that are relatively stable throughout a person's lifetime, and these traits are generalized across a variety of performance domains. This trait-based approach primarily focuses on the selection of individuals with AP characteristics.

The second perspective, the Domain-Specific perspective, on the other hand, focuses on the change in performance that being adaptable has and the process by which an employee becomes adaptive (Baard, Rensch & Kozlowski, 2014). Within the Domain-Specific perspective, there are two approaches. One approach is the performance change approach. This change approach examines how the acquisition of knowledge and skills helps to effectively navigate the change in task or environment. The second approach under the Domain-Specific perspective is the process approach. The process approach to studying AP views it as more than just a level of performance after a change has occurred. Instead, researchers study not only the change that is made in response to a novel task or turbulent environment but also the responses that must be completed in

order to handle the change (Baard et al., 2014). Both the performance change and the process change approach to AP assume that AP can be learned and trained into employees.

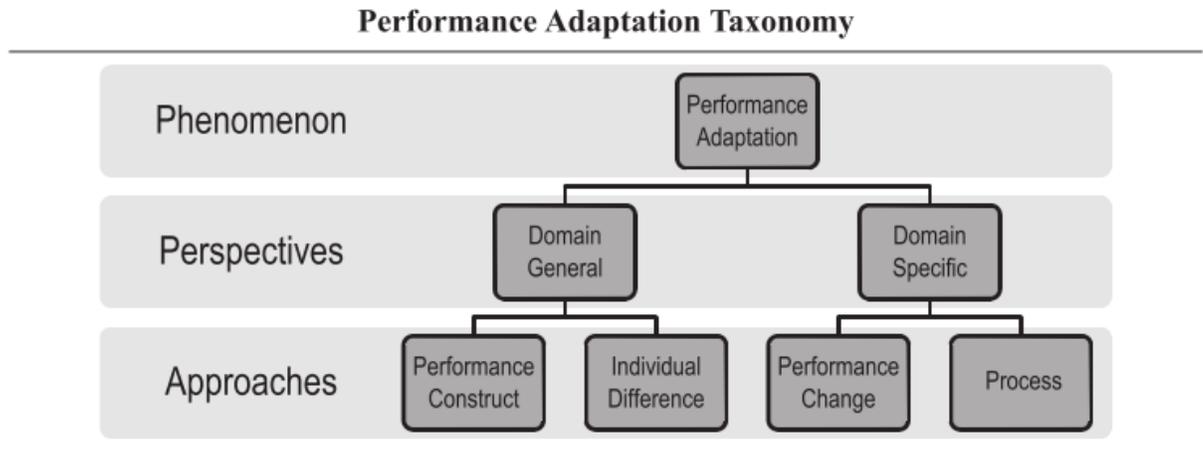


Figure 1. Performance Adaptation Taxonomy. Reprinted with permission from Baard, S. K., Rench, T. A., & Kozlowski, S. W. J. (2014). Performance Adaptation: A Theoretical Integration and Review. Journal of Management, 40(1), 48-99.

Models of Adaptive Performance

To demonstrate the importance of AP and define the concept in the work context, Pulakos et al. (2000) developed an eight-dimension taxonomy through the use of the critical incidents technique. This taxonomy was created in the same vein as the Campbell, McCloy, Oppler, and Sager's (1993) model of job performance. In Campbell et al. (1993) model, researchers found eight dimensions of job performance that generalized across occupations. These dimensions included, job-specific task proficiency, non-job-specific-

task proficiency, written and oral communication, demonstrating effort, maintaining performance discipline, maintaining peer and team performance, supervision/leadership, and management/administration. Later, Campbell et al. (1993) suggested that a dimension dealing with how successfully employees adapt to changes in the workplace is an important aspect that was not included in the model but would be a critical addition.

Numerous models have been generated to define the additional dimension that Campbell et al. (1993) proposed, but the AP model proposed by Pulakos et al. (2000) is the most widely examined. Pulakos et al. (2000) obtained over 1,000 critical incidents and analyzed them to reveal an eight-dimension taxonomy that consisted of 1) Handling Emergencies or Crises, 2) Handling Work Stress, 3) Solving Problems Creatively, 4) Dealing with Uncertain and Unpredictable Situations, 5) Learning Work Tasks, Technologies, and Procedures, 6) Demonstrating Interpersonal Adaptability, 7) Demonstrating Cultural Adaptability, and 8) Demonstrating Physical Adaptability. Table 1 provides more detailed definitions of these eight dimensions. Pulakos, Schmitt, Dorsey, Arad, Borman and Hedge (2002) extended the work of Pulakos et al. (2000) and found mixed support for the model. On one hand, the model found support for the eight dimensions based on individuals' self-reports. On the other hand, a one-factor model was found to have the best fit when AP was evaluated by supervisors, instead of self.

Griffin and Hesketh (2003) also proposed a simpler model of AP. The Griffin and Hesketh (2003) model was based on proactive, reactive, and tolerant AP behaviors. Griffin and Hesketh (2003) argued that their model adequately covered all of the content proposed by the Pulakos et al. (2000) dimensions in these three dimensions. Griffin and Hesketh (2003) contended that the proactive AP dimension encompassed creative

problem solving and dealing with crises; The reactive AP dimension incorporated the dimensions of new learning, interpersonal, cultural, and physical adaptability, and the tolerant AP dimension involved coping with stress and uncertainty.

Building on the Pulakos et al (2000) AP model, Ployhart and Bliese (2006) developed the I-ADAPT measure. Ployhart and Bliese (2006) explained that their “goals were to develop a comprehensive self-report measure that assesses eight dimensions of adaptability, but is short enough that it can be completed in approximately 10 minutes” (p. 29). After writing numerous items for each dimension, the authors settled on 5 items for each of the eight dimensions. After review from subject matter experts and pilot testing the measure, the authors found strong support for both convergent and discriminant validity of the measure. Ployhart and Bliese (2006) built the I-ADAPT on the notion that adaptability is the ability, skill, and willingness to change behavior. In other words, the I-ADAPT is a measure of the potential an individual possesses to adapt their performance.

The creativity dimension is defined as the ability to solve complex and vague issues. The handling crisis dimension deals with acting effectively to handle potentially life-threatening situations. The cultural dimension focuses on an individual's ability to learn new languages, values, and customs. The interpersonal dimension is characterized by a person's ability to successfully adjust interpersonal styles when dealing with different individuals. The learning dimension centers on an individual's ability to prepare and learn new skills that will be needed in the future. The physical dimension is defined as the ability to adjust to different environmental conditions such as heat, cold, or noise. The work stress dimension focuses on an individual's ability to remain calm and handle

frustrating circumstances. Finally, the uncertainty dimension is defined as an individual's ability to effectively adjust focus and action (Ployhard and Bliese, 2006).

The Measure of Adaptive Performance (MAP), on the other hand, seeks to measure the behaviors that an individual is already employing. In contrast to the I-ADAPT, the MAP assesses the performance that is currently taking place on the job. The lesser known MAP, originally called the Adaptive Performance Scale (Frame, Roberto, & Rigdon, 2006), has been modified and refined into what it is in its current state (Lillard, Watts, Frame, Hein, Rigdon, & Orsak-Robinson, 2012; Watts, Frame, Rigdon, & Orsak-Robinson, 2011). Using exploratory and confirmatory factor analysis, the MAP was found to have a robust nine-factor structure (Table 1; Marlow, Calarco, Frame, & Hein, 2015). The dimensions are applied creativity, adaptability in crisis situations, cultural adaptability, emotional control, emotional perceptiveness, flexibility of opinion, openness to criticism, proactive learning, and dealing with ambiguous situations. Applied creativity is defined as the ability to analyze information and generate new approaches to problems. Adaptability in crisis situations is a person's ability to appropriately analyze and react in emergency situations. Cultural adaptability deals with learning to work with and respecting the cultures or values of individuals who are different from oneself. Emotional control is defined as the ability to appropriately maintain feelings in stressful situations. Emotional perceptiveness deals with being able to understand the feelings and behaviors of others. Flexibility of opinion consists of changing one's own behavior or judgements based on the opinions of others when it is appropriate to do so. Openness to criticism is defined as the ability to be open to and learn from feedback. Proactive learning deals with actively keeping knowledge and skills

up to date and enthusiastically learning new approaches and technologies. Finally, dealing with ambiguous situations is defined as appropriately adjusting goals and actions to deal with altering situations even when circumstances are uncertain. Marlow et al. (2015) suggested that after having established robust nine-factor structure, a logical next step would be to determine whether there is a relationship between map scores and performance of workers on the job.

Antecedents of Adaptive Performance

Over the last two decades, researchers have examined the potential antecedents of AP. Among these antecedents are individual and contextual differences. While some of the individual and contextual differences have been thoroughly studied, others have only been briefly examined.

Individual Differences. Numerous studies have attempted to identify the individual differences that lead to successfully adapting one's performance (Pulakos et al, 2000; Ployhart & Bliese, 2006, Jundt, Shoss & Huang, 2015). In their review of the literature of AP, Jundt, Shoss, and Huang (2015) reveal that cognitive ability, the Big Five personality traits and goal orientation are some of the individual differences that are commonly studied. Allworth and Hesketh (1999) examined AP and personality and discussed the finding that openness to experience had a slightly stronger relationship with AP than with either task or contextual performance. Another interesting finding by these researchers was how abstract reasoning, numerical reasoning, and clerical speed and accuracy were each positively related to the ratings of AP given by supervisors (Allsworth & Hesketh, 1999).

Le Pine, Colquitt, and Erez (2006) examined decision-making performance using a computerized simulation to measure quality of decisions before and after an unforeseen change in a decision making task. These researchers found that cognitive ability, conscientiousness, and openness to experience predicted decision-making performance when changes occurred. Once a change in the environment occurred, those higher in cognitive ability and openness made better decisions. Interestingly enough, those low in conscientiousness actually made better decisions. Follow up analyses revealed that this was due to the dependability sub-facet of conscientiousness and not reflective of the achievement-striving or self-discipline aspects of the trait. Additionally, Huang, Ryan, Zabel, and Palmer (2014) identified emotional stability, the extraversion sub-facet of ambition, and openness were all predictors of AP. Emotional stability aids in predicting reactive AP, while ambition helps to predict proactive AP (Huang, Zabel and Palmer, 2014). Finally, Jiang (2017) examined the relationship between proactive personality and career adaptability and found that the positive relationship is mediated by thriving.

Contextual Differences. Unlike AP and individual differences research, contextual differences and their impact on AP has received only minor attention. According to Griffin and Hesketh (2003) employees who said their work environment was more complex received higher AP ratings from supervisors than those that did not. In other words, subjecting employees to changing or even turbulent work environments could be a key to helping employees learn to adapt. This may also put employees in a situation where they are required to adapt. Additional contextual differences include leadership, team-based work, and training strategies (Charbonnier-Voirin, El Akremi, and Vandenberghe, 2010).

Leadership. Griffin, Parker, and Mason (2010) examined the impact leadership had on an employees' AP. They found that leaders with a strong vision were able to increase adaptive behaviors in individuals high in openness to change within their work role. For individuals low in openness to work role change, however, it was found that these individuals will feel threatened by a leader who highlights AP in his or her vision. O'Connell, McNeely, and Hall (2007) examined the relationship between managerial support and adaptability and found a positive, significant impact. The researchers suggest that support from managers may help increase a worker's confidence and sense of competence in times of change. Charbonnier-Voirin, El Akremi, & Vandenberghe (2010) tested and found support for the notion that transformational leadership was positively related to AP by surveying employees and managers in an aeronautic company. This implies that a transformational leadership climate serves to increase AP.

Team-Based Work. In response to the shift to team-based work in organizations, researchers began to study both individual *and* team adaptability. Burke et al. (2006) defines team adaptation as "a change in team performance, in response to a salient cue or cue stream, that leads to a functional outcome for the entire team" (p. 1190). A study based on team-based work and AP found that a team's AP can be represented by the sum of individual AP of each individual member (Han & Williams, 2008).

Consequences of Adaptive Performance

There has been a great deal of research surrounding the construct validity of various AP measures (Charbonnier-Voirin & Roussel, 2012; Pulakos, Arad, Donovan, & Plamondon, 2000) along with antecedents of AP (Good, 2014; Marques-Quinteiro & Curral, 2012). Despite this abundance of research, the research concerning the

consequences of AP is surprisingly scarce. Jundt, Shoss, and Huang (2015) called for further research into the outcomes of AP for both individuals and the organization. In an attempt to close this gap, the present study will examine the relationship between AP and performance on a situational judgement test (SJT) and an in-basket work sample to identify outcomes of AP.

What is a Situational Judgement Test?

First used in the 1920s, situational judgement tests (SJTs) were created in an attempt to measure decision making in regard to social intelligence. Test takers were given a situation and asked to select which of the multiple responses was correct (Moss, 1926). A few decades later, during World War II, a group of psychologists created an assessment in an attempt to measure judgement of soldiers by utilizing a similar format to the one previously developed (Northrop, 1989). The popularity of the SJT began to grow in the 1940s when a variety of assessments measuring supervisory potential were developed (Cardall, 1942; File & Remmers, 1948; Bruce & Learner, 1965). Among these tests, File and Remmers (1948, 1971) created the *How Supervise?* assessment intended to measure knowledge among supervisors. The assessment covered multiple situations dealing with issues like implementing company policies or dealing with other workers. Supervisors then had to examine and select which action was the most desirable to take (File & Remmers, 1948, 1971).

McDaniel, Finnegan, Morgeson, Campion and Braverman (2001) summarized the research findings on SJTs in their meta-analysis. The first important research finding they discuss is the SJTs ability to measure a multitude of different constructs. The second finding these authors presented was the tendency for all SJTs to be similar in format.

Most commonly, these assessments present the test taker with a problem situation and then asks the test taker to evaluate the best course of action from a list of possible actions. Third, McDaniel et al. (2001) state that these tests display moderate validity. Finally, some tests show strong correlations with general mental ability while others demonstrate lower correlations. These tests demonstrate the flexibility to assess varying constructs similarly to selection techniques like interviews or assessment centers. Christian, Edwards, and Bradley (2010) found that SJTs assessing leadership and teamwork offer high criterion-related validity for managerial job performance. McDaniel et al. (2001) concluded that SJTs created on a solid empirical foundation are good predictors of job performance and demonstrate a level of validity comparable to other commonly used selection measures and assessment centers. Additionally, a SJT developed from a job analysis demonstrates higher validity than one that is not developed from a job analysis.

Chan and Schmitt (2002) found similar results in their research on the validity of SJTs. These researchers designed an SJT to measure the test taker's ability to adapt and successfully solve a work-related situation. They found that the SJT could predict task performance and that the SJT offered incremental validity over cognitive ability predictors, personality predictors, and job experience (Chan & Schmitt, 2002).

Whetzel, McDaniel, and Nguyen (2008) found that SJT's add incremental validity beyond that of a cognitive ability measure and also help to lessen the adverse impact that is typically seen with a cognitive ability measure . While blacks still scored lower on average than whites, the gap was significantly smaller than when a cognitive ability measure is used. Therefore, differences in black-white SJT scores can be, at least partially, explained by the extent to which the SJT also measured cognitive ability.

SJT's are becoming increasingly popular in the selection realm partly due to the demonstration of higher face and content validity. This may in part be due to the cost effective nature of the SJT over a traditional work sample or a more high-fidelity simulation (Chan & Schmitt, 2002). Due to the increase in popularity, it is important to examine the relationship between AP and performance on a SJT.

What is an In-Basket?

The in-basket assessment was first developed by Frederiksen, Saunders, and Wand (1957) in an attempt to create an instrument that could account for an individual's ability to organize a multitude of information, analyze problems based on the information, anticipate future problems based on the information, and make decisions that take all pieces of information into account. The original in-basket was created for the Air Force Personnel and Training Research Center to test the ability of Field Officers to perform tasks that dealt with administrative skills (Frederiksen, Saunders, and Wand, 1957).

In general, the in-basket has two distinct components. The first component contains background information about the imaginary situation that the test taker would pretend to be in. This includes things like an organization chart, job description, type of company, a calendar, and the explanation behind a hasty promotion or selection into a new role and/or unfamiliar role (Kesselman, Lopez, & Lopez, 1982). The second component of the in-basket deals with the set of problems that the test taker would face during the assessment. This includes memos, voicemails, radio messages, and emails to which the test taker would have to respond. Additional materials include items such as pens, pencils, paper, blank forms and paper clips (Kesselman, Lopez, & Lopez, 1982).

Whetzel, Rotenberry, and McDaniel (2014) found an estimated mean criterion-related validity of $r=.42$ for in-baskets ability to predict job performance in their meta-analysis. Lopez (1966) discusses the many advantages of using an in-basket assessment to evaluate and predict performance. One advantage is that it requires test takers to utilize higher problem solving and analytical skills than other assessments. In-baskets also give test takers the ability to demonstrate their creativity skills by solving problems in a variety of ways. This assessment also requires test takers to pay attention to details in order to solve problems, which is something that is critical to measure when it is job relevant. In-baskets test an individual's ability to come to a decision while keeping in mind multiple different perspectives. Hoffman, Kennedy, LoPilato, Manahan and Lance (2015) examined various individual differences variables, such as general mental ability and personality, and the impact these variables had on in-basket performance. General mental ability was strongly related to performance on the in-basket ($r=.25$) as was conscientiousness ($r=.13$) and openness ($r=.11$) although to a lesser extent. Despite this research, the research on how AP influences performance on in-baskets is nonexistent.

CHAPTER II: RESEARCH QUESTIONS AND HYPOTHESES

Based on the descriptions above, this study is designed to assess the outcomes of AP through the use of a SJT and in-basket. The first research question and the questions that follow will examine the correlation between the dimensions of the I-ADAPT and the MAP. Based on the above theoretical line of the association between the I-ADAPT and the MAP, it is expected that scores on the I-ADAPT dimensions and scores on the MAP dimensions will be significantly positively correlated.

Hypothesis 1: Scores on the I-ADAPT will be significantly positively correlated with scores on the MAP.

Research Question 1a: Will the *Creativity* dimension on the I-ADAPT be related to the *Applied Creativity* dimension on the MAP?

Research Question 1b: Will the *Handling Emergencies or Crisis Situations* dimension on the I-ADAPT be related to the *Adaptability in Crisis Situations* dimension on the MAP?

Research Question 1c: Will the *Demonstrating Cultural Adaptability* dimension on the I-ADAPT be related to the *Cultural Adaptability* dimensions on the MAP?

Research Question 1d: Will the *Learning Work Tasks, Technologies, and Procedures* dimension on the I-ADAPT be related to the *Proactive Learning* dimension on the MAP?

Research Question 1e: Will the *Dealing with Uncertain Situations* dimension on the I-ADAPT be related to the dimension *Dealing with Ambiguous Situations* on the MAP?

Research Question 1f: Will the *Interpersonal Adaptability* dimension on the I-ADAPT be related to the dimension *Interpersonal Adaptability* on the MAP?

Research Question 1g: Will the *Handling Work Stress* dimension on the I-ADAPT be related to the *Dealing with Work Stress* dimension on the MAP?

Research Question 1h: Will the *Physically Oriented Adaptability* dimension on the I-ADAPT be related to the dimension *Physical Adaptability* on the MAP?

Hypothesis 2a: An individual's overall level of AP as measured by the MAP will be positively related to their performance on the in-basket.

Hypothesis 2b: Each of the facets of AP as measured by the MAP will be positively correlated with performance on the in-basket.

Hypothesis 3a: An individual's overall level of AP as measured by the I-ADAPT will be related to their performance on the in-basket.

Hypothesis 3b: Each of the facets of AP as measured by the I-ADAPT will be positively correlated with performance on the in-basket.

Hypothesis 4a: An individual's overall level of AP as measured by the MAP will be positively related to their performance on the SJT.

Hypothesis 4b: Each of the facets of AP as measured by the MAP will be positively correlated with performance on the SJT.

Hypothesis 5a: An individual's overall level of AP as measured by the I-ADAPT will be positively related to their performance on the SJT.

Hypothesis 5b: Each of the facets of AP as measured by the I-ADAPT will be positively correlated with performance on the SJT.

Research Question 1: Will the overall MAP score have incremental validity over the I-ADAPT when predicting in-basket performance?

Research Question 2: Will the overall MAP score have incremental validity over the I-ADAPT when predicting SJT performance?

CHAPTER III: METHODS

Participants and Procedures

The study utilized archival data collected from a state highway patrol agency. MAP and I-ADAPT data were collected from the troopers through an online survey in April 2016. After removing participants for insufficient effort responding 365 Troopers and 128 Sergeants remained. The total sample for the MAP and I-ADAPT correlations turned out to be 493. The resulting sample consisted of 229 Troopers and 75 Sergeants who participated in the promotional process consisting of the in-basket and SJT through the years 2015, 2016, and 2017. For individuals who completed the promotional process more in than one year, the data closest to when the MAP and I-ADAPT was completed was used for analysis purposes.

The survey used in this study to collect the MAP and I-ADAPT data began with an informed consent page and asked participants to indicate if they wished to participate in the study. The next question asked them to indicate their current rank within the state highway patrol agency and how long they had been in that role. Upon completion of the survey, participants were asked demographic questions such as gender, age, and ethnicity.

Materials

Measure of Adaptive Performance (MAP). For this study, the most updated version of the MAP (Marlow et al., 2015) was utilized. As mentioned above, the MAP measures adaptive behaviors that the individual is or has performed. Nine dimensions of Individual Adaptability are included in this measure. The MAP consists of 63 items that involve assessing Individual Adaptability. Each of the 63 items is made up of a statement

related to a facet of adaptability. Participants were asked to report how well each statement matches their opinion about themselves using a 5-point Likert scale (from 1 = “Strongly Disagree” to 5 = “Strongly Agree”). An example of an item is, “I turn problems upside-down and inside-out to find fresh, new approaches.” See Appendix B for the full scale. According to the 9-factor model produced by Marlow et al. (2015) scale reliability estimates for the separate dimensions are as follows: Applied Creativity, $\alpha=.88$, Adaptability in Crisis Situations, $\alpha = .79$, Cultural Adaptability, $\alpha = .90$, Emotional Control, $\alpha = .81$, Emotional Perceptiveness, $\alpha = .86$, Flexibility of Opinion, $\alpha = .80$, Openness to Criticism, $\alpha = .80$, Proactive Learning, $\alpha = .84$, Dealing with Ambiguous Situations, $\alpha = .60$.

Individual Adaptability Measure (I-ADAPT). The I-ADAPT measure was developed by Ployhart and Bliese based on Pulakos et al.’s (2000) eight dimensions of AP. As mentioned above, the I-ADAPT measures adaptive potential of an individual. Upon testing the factor structure of the I-ADAPT, Marlow et al. (2015) found support for the eight-factor model of AP with an overall scale reliability estimate of $\alpha = .79$. Dimension scale reliability estimates are as follows: Creativity, $\alpha = .73$, Crisis, $\alpha = .89$, Cultural, $\alpha = .83$, Interpersonal, $\alpha = .79$, Learning, $\alpha = .87$, Physical, $\alpha = .64$, Work Stress, $\alpha = .86$, Uncertainty, $\alpha = .74$. Due to low reliability and/or fit, two of the I-ADAPT items were removed from the mode. This resulted in a 46-item measure and a mean coefficient alpha reliability estimate of $\alpha=.79$ for the I-ADAPT measure. Again, participants were required to self-report how well each statement matched their opinions using a 5-point Likert scale (from 1= “Strongly Disagree” to 5= “Strongly Agree”). An

example item from the I-ADAPT is, “I easily respond to changing conditions”. See Appendix C for the full scale.

Situational Judgment Test and In-Basket. The SJT and in-basket were developed by the Center for Organizational and Human Resource Effectiveness. Using the existing job description from the state highway patrol a critical incidents interview guide was developed. Interviews with current Sergeants, Lieutenants, and members of the command staff took place, and over 100 interviews were completed. Each critical incidents interview was conducted by a team of two graduate students. One graduate student served as the primary note taker while the other graduate student asked the interview questions and took brief notes. During the interviews, information involving both good and bad performance was collected on the fifteen job knowledge domains and twenty-three skills, abilities, and other characteristics (SAO's) previously identified in other job analyses.

Based on the information collected in the critical incidents interview, 150-160 SJT items were created using the fifteen job knowledge domains and twenty-three SAOs identified during the interviews. All items were then brought to the command staff to be reviewed and rated. The command staff was advised to make any changes to answers they felt were necessary to accurately represent the best and worst course of action in a situation. Once all the ratings were collected a threshold of agreement score was calculated. Only items that were highly agreed upon were used and an empirical key was created using these ratings. The final SJT consisted of 100 separate scenarios for both Troopers and Sergeants. Each group had 3 and a half hours to complete the SJT assessment. Participants read each situation and ranked the four responses in order of 1)

most effective 2) second most effective 3) second least effective 4) least effective based on what they would do in the given situation. This method utilizes four data points as opposed to one data point. The scoring process is based on distance scores with a perfect match to the SME's resulting in a 0 score. An applicant whose answers were the exact opposite of the SME's would maximize the distance score thus earning the worst possible score of 8. This score is calculated by subtracting the SMEs rankings by the candidate's rankings and then squaring the difference. To illustrate, if the SMEs ranked the options for a situation as 1, 2, 3, 4 and the candidate ranked the options for a situation as 4, 3, 2, 1 you would take the difference between each option and square it and add all the squared differences together. Once all the difference scores are found, the scores for each individual item are added together and subtracted by 100 to compensate for the notion that higher scores mean better performance.

The in-basket simulation was used to assess a candidates' ability to prioritize information, solve problems, and handle various situations. Again, the information gathered from the critical incidents interviews was used to create the in-basket items. Candidates were given all the materials at the beginning of the assessment. These materials included in-basket instructions, an organizational chart, a calendar with important dates, and the in-basket items. The three and a half hour in-basket consisted of 35 items for Troopers and 32 items for Sergeants. It is important to note that in 2015 and 2016, participants also received response forms in the in-basket. In 2017, the assessment converted from paper-and-pencil to a computerized version so paper response forms were no longer included. The in-basket is scored by trained raters using behaviorally anchored rating scales (BARS) to help guide the ratings.

CHAPTER IV: RESULTS

Hypothesis 1

Hypothesis one examined the degree to which an individual's I-ADAPT score is related to their MAP score. To determine this, correlations between participants' I-ADAPT and MAP scores were reviewed for significance. Prior to computing the correlations, the average of each of the dimensions was computed to come up with the participants' dimension level of AP according to the I-ADAPT and MAP.

For research question 1a, correlations were calculated to identify the magnitude of the relationship between the Creativity dimension on the I-ADAPT and the Applied Creativity dimension on the MAP. A Pearson product-moment correlation coefficient was computed to assess the relationship between the Creativity dimension on the I-ADAPT and the Applied Creativity dimension on the MAP. There was a positive correlation between the two dimensions, $r = 0.818$, $p < .01$.

For research question 1b, correlations were calculated to identify the magnitude of the relationship between the Demonstrating Cultural Adaptability dimension on the I-ADAPT and the Cultural Adaptability dimension on the MAP. A Pearson product-moment correlation coefficient was computed to assess the relationship between the two dimensions. The Demonstrating Cultural Adaptability dimension on the I-ADAPT and the Cultural Adaptability dimension on the MAP were significantly correlated, $r = .84$, $p < .01$.

For research question 1c, correlations were calculated to identify the magnitude of the relationship between the Learning Work Tasks, Technologies, and Procedures dimension on the I-ADAPT and the Proactive Learning on the MAP. The Learning Work

Tasks, Technologies, and Procedures dimension on the I-ADAPT and the Proactive Learning dimension on the MAP were significantly correlated, $r = .842, p < .01$.

For research question 1d, correlations were calculated to identify the magnitude of the relationship between the Dealing with Uncertain Situations dimension on the I-ADAPT and the Dealing with Ambiguous Situations dimension on the MAP. The dealing with Uncertain Situations dimension on the I-ADAPT and the Dealing with Ambiguous Situations dimension on the MAP were significantly correlated, $r = .760, p < .01$.

For research question 1e, correlations were calculated to identify the magnitude of the relationship between the Handling Emergency or Crisis Situations dimension on the I-ADAPT and the Crisis dimension on the MAP. The Handling Emergency or Crisis Situations dimension on the I-ADAPT and the Crisis dimension on the MAP were significantly correlated, $r = .773, p < .01$.

Hypothesis 2

Hypothesis 2a examined the degree to which an individual's overall level of AP on the MAP will be positively related to their performance on the in-basket. To test hypothesis 2a, regression analyses were used. In-basket scores served as the dependent variable and MAP total scores served as the independent variable.

To create a variable that represented overall MAP score, the ratings on each of the dimensions were averaged together. A linear regression was performed to explore the relationship. See Table 1 for descriptive statistics. The overall MAP score was not found to be a useful predictor of Trooper performance on the in-basket. The overall MAP score was not found to be a useful predictor of Sergeant performance on the in-basket. These results do not support hypothesis 2, which hypothesized that an individual's overall level

of AP as measured by the MAP would be positively related to their performance on the in-basket.

Table 1.
Descriptive Statistics for Hypothesis 2a

Variable	<i>M</i>	<i>SD</i>	<i>n</i>
Trooper In-Basket Scores	28.08	5.15	229
Trooper Overall MAP Scores	3.84	0.39	229
Sergeant In-Basket Scores	35.18	6.93	75
Sergeant Overall MAP Scores	3.74	0.49	75

Hypothesis 2b examined the degree to which each of the facets of AP as measured by the MAP was positively related to performance on an in-basket. To test hypothesis 2b, regression analyses were calculated to identify the magnitude of the relationship. These individual analyses considered each dimension variable.

Regression analyses were performed on each of the nine dimensions of the MAP for Troopers and compared to Trooper in-basket performance. See Table 2 for descriptive statistics. None of the predictors were significant. Thus, the results of this analysis for Troopers do not support hypothesis 2b.

Regression analyses were then performed on each of the nine dimensions of the MAP for Sergeants and compared to Sergeant performance on the in-basket. See Table 3 for descriptive statistics. None of the predictors were significant. Thus the results of this analysis for Sergeants also do not support hypothesis 2b.

Table 2.

Descriptive Statistics for Troopers for Hypothesis 2b

Variable	<i>M</i>	<i>SD</i>	<i>n</i>
In-Basket Scores	28.08	5.15	229
Cultural Adaptability	.05	.48	229
Emotional Perceptiveness	-.20	.49	229
Flexibility of Opinion	.05	.55	229
Openness to Criticism	.03	.47	229
Proactive Learning	.03	.47	229
Uncertainty	.02	.50	229
Applied Creativity	.05	.52	229
Crisis	.02	.53	229
Emotional Control	.03	.42	229

Table 3.

Descriptive Statistics for Sergeants for Hypothesis 2b

Variable	<i>M</i>	<i>SD</i>	<i>n</i>
In-Basket Scores	35.18	6.93	75
Cultural Adaptability	-.12	.60	75
Emotional Perceptiveness	-.30	.60	75
Flexibility of Opinion	-.13	.50	75
Openness to Criticism	-.07	.56	75
Proactive Learning	-.05	.60	75
Uncertainty	-0.11	.59	75
Applied Creativity	-0.09	.61	75
Crisis	-0.01	.58	75
Emotional Control	-0.29	.53	75

Hypothesis 3

Hypothesis 3a examined the degree to which an individual's overall level of AP on the I-ADAPT was positively related to their performance on the in-basket. To test hypothesis 3a, regression analyses were used. In-basket scores were the dependent variable and I-ADAPT total scores were the independent variable.

In order to create a variable that represented overall I-ADAPT score, the ratings on each dimension were averaged together. A linear regression analysis was performed to

explore the relationship. See Table 4 for descriptive statistics. The overall I-ADAPT score was not found to be a useful predictor for in-basket scores for Troopers or Sergeants. These results did not support hypothesis 3a which hypothesized that an individual's overall level of AP as measured by the I-ADAPT would be positively related to their performance on the in-basket.

Table 4.

Descriptive Statistics for Hypothesis 3a

Variable	<i>M</i>	<i>SD</i>	<i>N</i>
Trooper In-Basket Scores	28.09	5.15	220
Trooper Overall I-ADAPT Scores	3.69	.32	220
Sergeant In-Basket Scores	35.37	6.81	67
Sergeant Overall I-ADAPT Scores	3.57	.40	67

Hypothesis 3b examined the degree to which each of the facets of AP as measured by the I-ADAPT will be positively related to performance on an in-basket. To test hypothesis 3b, regressions were calculated to identify the magnitude of the relationship.

Regression analyses were conducted on the eight dimensions of the I-ADAPT for Troopers and compared to Trooper performance on the in-basket. See Table 5 for descriptive statistics. None of the predictors were significant. Thus, the results of this analysis for Troopers do not support hypothesis 3b.

Regression analyses were then performed on each of the nine dimensions of the I-ADAPT for Sergeants and compared to Sergeant performance on the in-basket. See Table 6 for descriptive statistics. None of the predictors were significant. Thus, the results of this analysis for Sergeants also do not support hypothesis 3b.

Table 5.

Descriptive Statistics for Troopers for Hypothesis 3b

Variable	<i>M</i>	<i>SD</i>	<i>n</i>
In-Basket Scores	28.09	5.21	220
Crisis	.05	.52	220
Cultural Adaptability	.07	.51	220
Interpersonal	.02	.44	220
Learning	.04	.46	220
Creativity	.04	.51	220
Uncertainty	.02	.36	220
Work Stress	-.20	.64	220
Physical	.04	.46	220

Table 6.

Descriptive Statistics for Sergeants for Hypothesis 3b

Variable	<i>M</i>	<i>SD</i>	<i>n</i>
In-Basket Scores	35.36	6.8	67
Crisis	-.10	.65	67
Cultural Adaptability	-0.21	.65	67
Interpersonal	-.08	.54	67
Learning	-.08	.57	67
Creativity	-.10	.57	67
Uncertainty	-.05	.45	67
Work Stress	-.01	.57	67
Physical	-.10	.48	67

Hypothesis 4

Hypothesis 4a examined the degree to which an individual's overall level of AP on the MAP was positively related to their performance on the SJT. To test hypothesis 4a, regression analyses were used. SJT scores will be the dependent variable and MAP total scores will be the independent variable.

A linear regression was performed to explore the relationship. See Table 7 for descriptive statistics for both Trooper and Sergeant scores. These results do not show

support for hypothesis 4a which hypothesized that an individual's overall level of AP as measured by the MAP would be positively related to their performance on the SJT.

Table 7.
Descriptive Statistics for Hypothesis 4a

Variable	<i>M</i>	<i>SD</i>	<i>n</i>
Trooper SJT Scores	28.32	5.24	229
Trooper Overall MAP Scores	3.84	.39	229
Sergeant SJT Scores	35.34	6.34	75
Sergeant Overall MAP Scores	3.74	.49	75

Hypothesis 4b examined the degree to which each of the facets of AP as measured by the MAP was positively related to performance on the SJT. To test hypothesis 4b, regressions were calculated to identify the magnitude of the relationship.

Regression analyses were conducted for the nine dimensions of the MAP for Troopers and compared to Trooper performance on the SJT. See Table 8 for descriptive statistics. Results showed that Cultural Adaptability had a negative relationship with SJT performance for Troopers, $F(9, 219)=2.77$, $MSE=71.24$, $p<.001$, $Adj R^2=.102$. Additionally, results showed that Applied Creativity had a positive relationship with SJT performance for Troopers, $F(9, 219)=2.77$, $MSE=71.24$, $p=.024$, $Adj R^2=.102$. See Table 9 for the regression models. The results of this analysis are partially supported for this hypothesis.

Regression analyses were conducted for the nine dimensions of the MAP for Sergeants and compared to Sergeant performance on the SJT. See Table 10 for descriptive statistics. Results showed that Applied Creativity was negatively related to SJT performance for Sergeants, $F(9, 65)=1.44$, $MSE=54.93$, $p=.04$, $Adj R^2=.05$. See Table

11 for the regression model. The results of this analysis were partially supported for this hypothesis.

Table 8.
Descriptive Statistics for Troopers for Hypothesis 4b

Variable	<i>M</i>	<i>SD</i>	<i>n</i>
SJT Scores	28.32	5.24	229
Cultural Adaptability	.05	.48	229
Emotional Perceptiveness	-.20	.49	229
Flexibility of Opinion	.05	.55	229
Open to Criticism	.03	.47	229
Proactive Learning	.03	.47	229
Uncertainty	.02	.50	229
Creativity	.05	.52	229
Crisis	.02	.53	229
Emotional Control	.03	.42	229

Table 9.
Regression Model 4b for Predicting Trooper SJT Score

Predictor	<i>B</i>	<i>SE(B)</i>	<i>B</i>
(Constant)	28.79	.422	
Cultural Adaptability	-4.60	1.30	-.42
Applied Creativity	2.50	1.10	.25

Table 10.
Descriptive Statistics for Sergeants for Hypothesis 4b

Variable	<i>M</i>	<i>SD</i>	<i>n</i>
SJT Scores	35.34	6.34	75
Cultural Adaptability	-.12	.60	75
Emotional Perceptiveness	-.30	.60	75
Flexibility of Opinion	-.13	.59	75
Open to Criticism	-.07	.56	75
Proactive Learning	-.46	.60	75
Uncertainty	-.01	.59	75
Creativity	-.09	.61	75
Crisis	-.01	.58	75
Emotional Control	-.03	.53	75

Table 11.
Regression Model 4b for Predicting Sergeants SJT Score

Predictor	B	SE(B)	B
(Constant)	35.87	.905	
Applied Creativity	-2.20	1.97	-.21

Hypothesis 5

Hypothesis 5a examined the degree to which an individual's overall level of AP on the I-ADAPT was positively related to their performance on the SJT. To test hypothesis 5a, regression analyses were used. In-basket scores were the dependent variable and I-ADAPT total scores were the independent variable.

Regression analyses were conducted for the overall level of AP as measured by the I-ADAPT in relation to performance on the SJT. See Table 12 for descriptive statistics for both Troopers and Sergeants. These results do not show support for hypothesis 5a which hypothesized that an individual's overall level of AP as measured by the I-ADAPT would be positively related to scores on the SJT.

Table 12.
Descriptive Statistics for Hypothesis 5a

Variable	<i>M</i>	<i>SD</i>	<i>n</i>
Trooper SJT Scores	28.40	5.12	220
Trooper Overall I-ADAPT Scores	3.70	.32	220
Sergeant SJT Scores	35.57	6.81	67
Sergeant Overall I-ADAPT Scores	3.57	.40	67

Hypothesis 5b examined the degree to which each of the facets of AP as measured by the I-ADAPT will be positively related to their performance on the SJT. To test hypothesis 5b, regressions will be calculated to identify the magnitude of the relationship.

Regression analyses were conducted for the eight dimensions of the I-ADAPT for Troopers and compared to Trooper performance on the SJT. See Table 13 for descriptive

statistics. Results showed that Adaptability in Crisis Situations was positively related to SJT performance for Troopers, $F(8, 211)=1.15$, $MSE=29.9$, $p=.03$, $Adj R^2=.042$.

Additionally, results showed that Cultural Adaptability was negatively associated with SJT performance for Troopers, $F(8, 211)=1.15$, $MSE=29.9$, $p=.03$, $Adj R^2=.042$. See Table 14 for the regression model. This demonstrates some support for hypothesis 5a.

Regression analyses were conducted for the eight dimensions on the I-ADAPT for Sergeants and compared to Sergeant performance on the SJT. See table 15 for descriptive statistics. Results showed that Adaptability in Uncertain Situations was positively related to SJT performance for Sergeants, $F(8, 58)=2.07$, $MSE=75.24$, $p=.01$, $Adj R^2=.22$.

Additionally, results showed that Physical Adaptability was negatively related to SJT performance for Sergeants, $F(8, 58)=2.07$, $MSE=75.24$, $p=.03$, $Adj R^2=.22$. See Table 16 for the regression models. This demonstrates partial support for hypothesis 5a.

Table 13.

Descriptive Statistics for Troopers for Hypothesis 5b

Variable	<i>M</i>	<i>SD</i>	<i>n</i>
SJT Scores	28.40	5.12	220
Crisis	.05	.52	220
Cultural Adaptability	.07	.51	220
Interpersonal	.02	.44	220
Learning	.04	.46	220
Creativity	.04	.51	220
Uncertainty	.01	.36	220
Work Stress	-.20	.64	220
Physical	.04	.46	220

Table 14.

Regression Model 5b for Predicting Trooper SJT Score

Predictor	<i>B</i>	<i>SE(B)</i>	<i>B</i>
(Constant)	38.49	.35	
Adaptability in Crisis Situations	2.42	1.09	.25
Cultural Adaptability	-1.70	1.90	-.17

Table 15.
Descriptive Statistics for Sergeants for Hypothesis 5b

Variable	<i>M</i>	<i>SD</i>	<i>n</i>
SJT Scores	35.19	6.41	67
Crisis	-.10	.65	67
Cultural Adaptability	-2.1	.64	67
Interpersonal	-.08	.56	67
Learning	-.08	.57	67
Creativity	-.10	.57	67
Uncertainty	-.05	.45	67
Work Stress	-.01	.57	67
Physical	-.10	.48	67

Table 16.
Regression Model 5b for Predicting Sergeant SJT Score

Predictor	<i>B</i>	<i>SE(B)</i>	<i>B</i>
(Constant)	34.56	.81	
Adaptability in Uncertain Situations	9.0	3.66	.63
Physical Adaptability	-5.01	2.19	-.37

Research Question 1

Research question 1 examined if the MAP provides incremental validity over the I-ADAPT when predicting in-basket performance. To test research question 1, a hierarchical regression was used. For this analysis, a hierarchical regression was conducted with in-basket scores as the dependent variable. The overall I-ADAPT score was entered at stage one of the regression. The overall MAP score was entered at stage two.

For Troopers, the hierarchical regression revealed that adding in the overall MAP score contributed significantly to the regression model, $F(1, 217) = 2.10$, $MSE=26.92$,

$p=.047$ and accounted for 13.8% of the variance. For Sergeants, the hierarchical regression revealed that adding in the overall MAP scores did not contribute significantly to the regression model.

Research Question 2

Research question 2 examined if the MAP provides incremental validity over the I-ADAPT when predicting SJT performance. To test research question 2, a hierarchical regression was used. For this analysis, a hierarchical regression was conducted with SJT scores as the dependent variable. The overall I-ADAPT score was entered at stage one of the regression. The overall MAP score was entered at stage two.

For Troopers, the hierarchical regression revealed that adding in the overall MAP scores did not contribute significantly to the regression model. For Sergeants, the hierarchical regression revealed that adding in the overall MAP score did not contribute significantly to the regression model.

CHAPTER V: DISCUSSION

General Discussion and Implications

The evolving organizational environment facilitates the necessity for employees to implement adaptive behaviors in order to maintain a performance. The current study examined the relationship between two measures of AP and performance on a SJT and an in-basket. While only a few dimensions of AP were predictors of performance on assessments, these results provide interesting insights.

The results of hypothesis 1 which examined correlations between the dimensions on the MAP and the I-ADAPT demonstrated the similarities of the two measurements. The magnitude of the correlation coefficients was expected given that both measure AP, however the I-ADAPT measures the potential that an employee has to utilize adaptive behaviors and the MAP measures behaviors that the employee is or has utilized. This explains why the correlations were not as high as they might have been if the two measured assessed the same exact same constructs. Essentially these instruments are measuring two sides of the same coin because the instruments take a different perspective to measuring AP. Practically speaking, these are encouraging results in that individuals who wish to measure AP have options in deciding which instrument to utilize since both have demonstrated construct validity.

The results from hypothesis 2a indicated that the MAP did not predict scores on the in-basket for Troopers nor Sergeants. This suggests that an individual's overall AP as measured by the MAP has no significant influence on the in-basket. Further analyses regarding the MAP and in-basket performance were conducted for hypothesis 2b. These

results showed that the nine MAP dimensions did not predict performance on the in-basket for Trooper nor Sergeants.

Hypothesis 3a tested whether an individual's score on the I-ADAPT would predict scores on the in-basket for Troopers and Sergeants. This hypothesis was not supported suggesting that in individual's overall AP as measured by the I-ADAPT has not significant influence on the in-basket. Further analyses regarding the I-ADAPT and in-basket performance were conducted. None of the dimensions of the I-ADAPT significantly predicted performance on the in-basket for Troopers or Sergeants.

Before continuing, it is important to explain that, for the purposes of this study, the SJTs were treated as unidimensional measures. Specifically, the SJT scores were treated in this study – in the same manner that the scores are used in practice – as single scores that reflect a candidate's overall decision-making ability. The remaining hypotheses were predicated on this assumption of unidimensionality and tested accordingly. The degree to which the assumption of SJT unidimensionality should be explored will be addressed throughout the remainder of the discussion.

Hypothesis 4a examined the extent to which an individual's overall level of AP as measured by the MAP could predict performance on a SJT. The results showed no significant relationship between performance on the SJT and overall MAP score.

To further examine the relationship, each of the dimensions of the MAP was examined against performance on a SJT. The results showed that Cultural Adaptability and Applied Creativity were predictors of SJT performance for Troopers. The negative beta weight for Cultural Adaptability for troopers indicates that Troopers less adaptable to different cultures performed better on the SJT than Troopers who were culturally

adaptive. While unexpected, it could be that the preponderance of the SJT items did not assess cultural issues but did involve other dimensions of performance on which performance is not (or negatively) related to a high degree of cultural sensitivity. Applied Creativity, on the other hand, resulted in a positive beta weight meaning that higher Applied Creativity results in better SJT scores as was expected. Interestingly, Cultural Adaptability was not significant for the Sergeants, but Applied Creativity was. The negative beta weight indicates that Sergeants who exhibited less creativity in solving problems, performed better on the SJT. These unexpected results could potentially be explained by the fact that much of the SJT content is heavily based on following rules and policies and using AP on the SJT could negatively impact scores.

Hypothesis 5a sought to understand the relationship between AP as measured by the I-ADAPT and how it relates to SJT performance. The results showed no significant relationship between performance on the SJT and overall I-ADAPT score.

In order to further examine the relationship, each of the dimensions of the I-ADAPT was examined against performance on the SJT. The results indicated that, as expected, Adaptability in Crisis Situations positively predicted performance on the SJT. The positive beta weight suggests that Troopers who make good decisions in emergencies and remain objective in crisis situations performed better on the SJT than those who did not. The negative beta weight for Cultural Adaptability, again, indicates that Troopers who were more open to other cultures performed worse on the SJT. As previously mentioned, this could be due to the nature of the SJT and the need to follow rules and protocol. Neither of these dimensions were significant predictors for Sergeants. However, Adaptability in Uncertain Situations and Physical Adaptability were predictors

of SJT performance. The positive beta weight for Adaptability in Uncertain Situations suggests that Sergeants who remain calm in unpredictable situations and perform well in unstable environments performed better on the SJT. The negative beta weight for Physical Adaptability is an interesting finding that can potentially be explained by the fact that the Sergeant position may require less physicality and requires more administrative tasks.

These results provide interesting implications. One reason that these measures of AP might not predict performance on an in-basket or SJT could be due to the fact that AP might be better captured over a more extended period of time. In-baskets and SJTs are only a snapshot in time collected under a controlled environment which only gives a portion of the overall picture that comprises job performance. Perhaps AP is better captured in long term, broader measures of performance such as performance appraisals or evaluations.

Furthermore, the results indicated that Sergeants scored lower, on average, than Troopers on both the I-ADAPT and the MAP. While this finding is interesting, it is not unexplainable. By virtue of their position and rank, Sergeants may be required and held accountable for following the rules more so than Troopers, thus resulting in fewer situations that allow AP.

A second explanation for this finding, is the notion that as employees gain more adaptive experiences over the course of their careers their tolerance for dealing with uncertain or ambiguous situations becomes second-nature, meaning employees might not perceive that a situation is uncertain or ambiguous because of this tolerance. This could result in more conservative self-ratings of their AP especially when they compare

themselves to those in positions similar to them. What was once seen as a novel situation that needed adapting to has now become expected as they have moved up in the ranks. In short, having more adaptive experiences could cause employees to have an altered frame of reference which leads to a shift in the utilizing of the scale leading to the result that Sergeants score lower than Troopers on measures of AP. One way to examine the validity of these explanations would be to conduct a longitudinal study that examines self-ratings of AP as Troopers move up in the ranks to see if there is a shift in the ratings over time.

Limitations and Future Research Directions

One limitation of this study involved the medium in which participants were assessed. Participants in the years 2015 and 2016 took a paper-and-pencil in-basket and SJT. However, in 2017, the in-basket and SJT were digitalized and participants were assessed using computerized methods. Future research should examine whether differences exist in these two mediums of assessment

While there was some variation in the sample, future research could examine how these measures of AP and performance on assessments generalizes to other working populations. The population used in this study is limited to a law enforcement agency. The results of this study might have been different for other professions such as nurses, manufacturing employees, or accounts for example.

Additionally, law enforcement agencies pride themselves on tradition and following protocol is highly encouraged, if not required. While many organizations support creativity and thinking outside the box, law enforcement agencies such as the one used in this sample may frown upon such practices. There may be certain instances when AP is needed and other times when it is not advisable. Due to the nature of the job,

following protocol and deviating from the norm might not be desirable in most situations. This could be the reason why many of the hypotheses and research questions were not supported. Therefore, future research should examine organizations outside of the law enforcement realm.

Furthermore, the results demonstrated that while some dimensions of AP predicted performance, others did not. This relationship was examined based on an omnibus score. As noted earlier, the overall score on the in-baskets and SJTs could potentially be measuring multiple dimensions as opposed to a single decision making dimension (in the case of SJTs) or a single work performance dimension (in the case of the In-baskets). With this in mind, future research should utilize subject matter experts (SMEs) to identify situations in the in-basket and SJT where AP should be utilized. After these situations are identified, the items or clusters of items on the in-basket and SJT can be examined to see if AP predicts subscales or certain dimensions of the assessments. Future research could then examine if there is a decision making or judgement aspect of performance that moderates the relationship between individual differences in AP and performance on the sub-dimensions of the assessments.

Today, performance is often thought of in terms of task performance, contextual performance, and AP. Having only examined one of these three constructs could be leading to a deficiency in our measure. Future research should also examine a measure of task performance, contextual performance, and AP and its relationship with an in-basket and SJT in order to provide a fuller picture of performance.

There is limited research on the trainability of AP. Due to the relevance of AP in today's work environment, research should examine if AP is trainable and what the best

way to train on AP is. The implications of a study such as that could provide opportunities for organizations to further develop their employees.

Conclusion

The environment in which employees must navigate is becoming exceedingly difficult to negotiate given the rapid changes that are taking place. This study provided insight into the ability with which measures of AP can help to predict scores on in-baskets and SJTs. Ultimately, this study examined correlations of two measures of AP on each of their respective dimensions. The results are encouraging in that there are two reliable measures of AP to choose from when assessing AP. Future research should further examine the ability of AP measures to predict assessment performance by breaking the assessments into sub-dimensions or content areas. Additionally, the trainability of AP should be examined on a deeper level. Doing so can provide insight into how employers can achieve workforces that can maintain effective performance in turbulent environment.

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APPENDICES

APPENDIX A: IRB Approval Letter

IRB
INSTITUTIONAL REVIEW BOARD
 Office of Research Compliance,
 010A Sam Ingram Building,
 2269 Middle Tennessee Blvd
 Murfreesboro, TN 37129



IRBN007 – EXEMPTION DETERMINATION NOTICE

Friday, February 23, 2018

Investigator(s): Mark Frame, Sydney Reichin; ; Emilie Seyfang
 Investigator(s)' Email(s): mark.frame@mtsu.edu; slr6v@mtmail.mtsu.edu;
 cs4b@mtmail.mtsu.edu
 Department: Psychology
 Study Title: Examining job analysis, in-basket, and situational judgement test, data
 from 2015 - 2017
 Protocol ID: 18-1180

Dear Investigator(s),

The above identified research proposal has been reviewed by the MTSU Institutional Review Board (IRB) through the **EXEMPT** review mechanism under 45 CFR 46.101(b)(2) within the research category (4) *Study involving existing data*. A summary of the IRB action and other particulars in regard to this protocol application is tabulated as shown below:

IRB Action	EXEMPT from further IRB review***	
Date of expiration	NOT APPLICABLE	
Participant Size	Existing Data	
Participant Pool	Existing data	
Mandatory Restrictions	1. Data covered under the letter provided by TN Dept of Safety and Homeland Security	
Additional Restrictions	None at this time	
Comments	None at this time	
Amendments	Date	Post-Approval Amendments
		None at this time

***This exemption determination only allows above defined protocol from further IRB review such as continuing review. However, the following post-approval requirements still apply:

- Addition/removal of subject population should not be implemented without IRB approval
- Change in investigators must be notified and approved
- Modifications to procedures must be clearly articulated in an addendum request and the proposed changes must not be incorporated without an approval
- Be advised that the proposed change must comply within the requirements for exemption
- Changes to the research location must be approved – appropriate permission letter(s) from external institutions must accompany the addendum request form
- Changes to funding source must be notified via email (irb_submissions@mtsu.edu)

Table 17.

Definitions of the Eight Dimensions of Adaptive Performance

Dimensions Title	Dimension
Handling emergencies or crisis situations	Reacting with appropriate and proper urgency in life threatening, dangerous, or emergency situations; quickly analyzing options for dealing with danger or crises and their implications; making split-second decisions based on clear and focused thinking; maintaining emotional control and objectivity while keeping focused on the situation at hand; stepping up to take action and handle danger or emergencies as necessary and appropriate.
Handling work stress	Remaining composed and cool when faced with difficult circumstances or a highly demanding workload or schedule; not overreacting to unexpected news or situations; managing frustration well by directing effort to constructive solutions rather than blaming others; demonstrating resilience and the highest levels of professionalism in stressful circumstances; acting as a calming and settling influence to whom others look for guidance.
Solving problems creatively	Employing unique types of analyses and generating new, innovative ideas in complex areas; turning problems upside-down and inside-out to find fresh, new approaches; integrating seemingly unrelated information and developing creative solutions; entertaining wide-ranging possibilities others may miss, thinking outside the given parameters to see if there is a more effective approach; developing innovative methods of obtaining or using resources when insufficient resources are available to do the job.

Table 17. (Cont.)

Dealing with uncertain and unpredictable work situations	Taking effective action when necessary without having to know the total picture or have all the facts at hand; readily and easily changing gears in response to unpredictable or unexpected events and circumstances; effectively adjusting plans, goals, actions, or priorities to deal with changing situations; imposing structure for self and others that provide as much focus as possible in dynamic situations; not needing things to be black and white; refusing to be paralyzed by uncertainty or ambiguity.
Learning work tasks, technologies, and procedures	Demonstrating enthusiasm for learning new approaches and technologies for conducting work; doing what is necessary to keep knowledge and skills current; quickly and proficiently learning new methods or how to perform previously unlearned tasks; adjusting to new work processes and procedures; anticipating changes in the work demands and searching for and participating in assignments or training that will prepare self for these changes; taking action to improve work performance deficiencies.
Demonstrating interpersonal adaptability	Being flexible and open-minded when dealing with others; listening to and considering others' viewpoints and opinions and altering own opinion when it is appropriate to do so; being open and accepting of negative or developmental feedback regarding work; working well and developing effective relationships with highly diverse personalities; demonstrating keen insight of others' behavior and tailoring own behavior to persuade, influence, or work more effectively with them.
Demonstrating cultural adaptability	Taking action to learn about and understand the climate, orientation, needs, and values of other groups, organizations, or cultures; integrating well into and being comfortable with different values, customs, and cultures; willingly adjusting behavior or appearance as necessary to comply with or show respect for others' values and customs; understanding the implications of one's actions and adjusting approach to maintain positive relationships with other groups, organizations, or cultures.

Table 17. (Cont.)

Demonstrating physically oriented adaptability	Adjusting to challenging environmental states such as extreme heat, humidity, cold, or dirtiness; frequently pushing self physically to complete strenuous or demanding tasks; adjusting weight and muscular strength or becoming proficient in performing physical tasks as necessary for the job.
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Adapted from: Adaptability in the workplace: Development of a taxonomy of adaptive performance (p. 617), by E. D. Pulakos, S. Arad, M. A. Donovan, & K. E. Plamondon, 2000. *Journal of Applied Psychology* 85(4), 612-624.

APPENDIX B: Measure of Adaptive Performance (MAP)

Below are the directions and scales used in the current study for the MAP items:

This survey asks a number of questions about your preferences, styles, and habits at work. If you are not currently employed, please take former employment, or experience as a student, into consideration when answering the following. Read each statement carefully. Then, for each statement choose the corresponding option that best represents your opinion. There are no right or wrong answers.

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Neither Agree nor Disagree
- 4 = Agree
- 5 = Strongly Agree
- 6 = Not Applicable

MAP Items (Quality Assurance Items included):

1. I take effective action when necessary without having to know the total picture or have all the facts at hand
2. I readily and easily change gears in response to unpredictable or unexpected events and circumstances
3. I deal with situations that are not black and white
4. I respect the culture of other people
5. For quality assurance purposes, please select "Not Applicable" for this statement
6. I refuse to be paralyzed by uncertainty or ambiguity
7. I enjoy working with people of different backgrounds
8. I learn about the needs and values of other people and cultures
9. I take action to understand other groups, organizations, and cultures
10. I am able to read the emotions of others well
11. I can understand how other people are feeling at any particular moment
12. I integrate well with people from different cultures
13. I am not a good person to rely on in life threatening, dangerous, or emergency situations
14. I am able to become comfortable with people with different values and customs
15. I would willingly alter my behavior to show respect for others' values and customs
16. I remain flexible and open-minded when dealing with others
17. For quality assurance purposes, please select "Strongly Disagree" for this statement
18. I listen to and consider others' viewpoints and opinions
19. I can be open and accepting of negative or developmental feedback regarding my work
20. I work well in developing effective relationships with highly diverse personalities
21. I demonstrate keen insight of others' behavior

22. For quality assurance purposes, please select "Neither Agree nor Disagree" for this statement
23. I tailor my behavior to persuade or influence others
24. I react with appropriate and proper urgency in life threatening, dangerous, or emergency situations
25. I make split-second decisions based on clear and focused thinking
26. I quickly analyze options for dealing with danger or crises and their implications
27. I maintain emotional control and objectivity while keeping focused on the situation at hand
28. I step up to take action and handle danger or emergencies as necessary and appropriate
29. I remain composed when faced with difficult circumstances
30. I remain calm when faced with a highly demanding workload
31. I manage frustration by directing effort to constructive solutions
32. I maintain high levels of professionalism in difficult situations
33. I demonstrate enthusiasm for learning new approaches and technologies for conducting work
34. I do what is necessary to keep my knowledge and skills current
35. I quickly learn new methods to complete work tasks
36. For quality assurance purposes, please select "Not Applicable" for this statement
37. I adjust to new work processes and procedures
38. I anticipate changes in the work demands
39. I actively participate in training that will prepare me for change
40. I seek out assignments that will prepare me for change
41. I take action to improve work performance deficiencies
42. I analyze information in unique ways
43. I generate new ideas in novel situations
44. I turn problems upside-down and inside-out to find fresh, new approaches
45. I integrate seemingly unrelated information and develop creative solutions
46. I entertain wide-ranging possibilities others may miss
47. For quality assurance purposes, please select "Disagree" for this statement
48. I think outside the given parameters to see if there is a more effective approach
49. I develop innovative methods of obtaining resources when faced with insufficient
50. I create unique ways to use existing resources when the desired resources are unavailable
51. I maintain a sense of humor in emotionally challenging situations
52. I maintain control over my negative emotions
53. I hide my emotions easily
54. I understand others' emotions quickly
55. I know when people are frustrated with me
56. I see other people's criticism of my work as an opportunity to improve
57. I continuously ask for constructive criticism
58. I am open to feedback from others, even if they do not know as much as I do
59. For quality assurance purposes, please select "Agree" for this statement
60. I accept criticism from those who have not been around as long as I have been

61. I alter my own action when it is appropriate to do so based on the opinions of others
62. I willingly adjust my behavior as necessary to show respect for others
63. I willingly alter my appearance if necessary to comply with others' values and customs
64. I change my behavior when it is appropriate to the situation
65. I have the ability to determine other people's expectations
66. I get along with people from different countries
67. I get along with people of different religious beliefs
68. I alter my own opinion when it is appropriate to do so
69. There are some emotions that I cannot control
70. For quality assurance purposes, please select "Strongly Agree" for this statement

APPENDIX C: Individual Adaptability Measure (I-ADAPT)

Below are the directions and rating scales used in the current study for the I-ADAPT items:

This survey asks a number of questions about your preferences, styles, and habits at work. If you are not currently employed, please take former employment, or experience as a student, into consideration when answering the following. Read each statement carefully. Then, for each statement choose the corresponding option that best represents your opinion. There are no right or wrong answers.

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Neither Agree nor Disagree
- 4 = Agree
- 5 = Strongly Agree
- 6 = Not Applicable

I-ADAPT Items (Quality Assurance Items included):

1. I am able to maintain focus during emergencies
2. I enjoy learning about cultures other than my own
3. I usually over-react to stressful news
4. I believe it is important to be flexible in dealing with others
5. I take responsibility for acquiring new skills
6. I work well with diverse others
7. I tend to be able to read others and understand how they are feeling at any particular moment
8. I am adept at using my body to complete relevant tasks
9. In an emergency situation, I can put aside emotional feelings to handle important tasks
10. I see connections between seemingly unrelated information
11. I enjoy learning new approaches for conducting work
12. I think clearly in times of urgency
13. I utilize my muscular strength well
14. It is important to me that I respect others' culture
15. I feel unequipped to deal with too much stress
16. I am good at developing unique analyses for complex problems
17. I am able to be objective during emergencies
18. My insight helps me to work effectively with others
19. I enjoy the variety and learning experiences that come from working with people of different backgrounds
20. I am easily rattled when my schedule is too full
21. For quality assurance purposes, please select "Not Applicable" for this statement
22. I usually step up and take action during a crisis

23. I need for things to be “black and white”
24. I am an innovative person
25. I feel comfortable interacting with others who have different values and customs
26. If my environment is not comfortable (e.g., cleanliness), I cannot perform well
27. I make excellent decisions in times of crisis
28. I become frustrated when things are unpredictable
29. I am able to make effective decisions without all relevant information
30. I am an open-minded person in dealing with others
31. I take action to improve work performance deficiencies
32. For quality assurance purposes, please select “Strongly Agree” for this statement
33. I am usually stressed when I have a large workload
34. I am perceptive of others and use that knowledge in interactions
35. I often learn new information and skills to stay at the forefront of my profession
36. I often cry or get angry when I am under a great deal of stress
37. When resources are insufficient, I thrive on developing innovative solutions
38. I am able to look at problems from a multitude of angles
39. I quickly learn new methods to solve problems
40. When something unexpected happens, I readily change gears in response
41. I would quit my job if it required me to be physically stronger
42. I try to be flexible when dealing with others
43. I can adapt to changing situations
44. I train to keep my work skills and knowledge current
45. I physically push myself to complete important tasks
46. I am continually learning new skills for my job
47. I perform well in uncertain situations
48. I can work effectively even when I am tired
49. I take responsibility for staying current in my profession
50. I adapt my behavior to get along with others
51. I cannot work well if it is too hot or cold
52. For quality assurance purposes, please select “Neither Agree nor Disagree” for this statement
53. I easily respond to changing conditions
54. I try to learn new skills for my job before they are needed
55. I can adjust my plans to changing conditions
56. I keep working even when I am physically exhausted