

Research Article

Development and Validation of the Trait-State Personality Questionnaire

Roberto Bueno¹, Christian Sandoval¹, Kali Lilienthal¹, Fasha Hayes¹¹ Department of Psychology, California State University, USA*Corresponding Author email: Roberto.Bueno909@csuci.edu

Submission: 22-01-2022

Revised: 05-05-2022

Accepted: 28-05-2022

ABSTRACT

Although plenty of research has been conducted on the Big Five Personality traits. The present study aimed to develop a scale that measured the Big Five as both a personality trait and state. Two studies were conducted (Study 1, N=597) to examine the internal consistency and structure of the Trait-State Personality Questionnaire and (Study 2=352) to examine the predictive validity by exploring the relationship between the big five and adaptability and satisfaction with life. Overall, the finding revealed good internal consistency $\alpha=.926$, predictive validity, and measurement variance. Potential applications of the Trait-State Personality Questionnaire are discussed.

Keywords: scale development, personality, psychology, adaptability, satisfaction with life, big five

1. INTRODUCTION

“We meet ourselves time and again in a thousand disguises on the path of life.” -**Carl Jung**

From the moment we are born we begin a journey of self-identification. As we develop and grow we are molded into the individuals that we will become. The never-ending journey of growing and exploration continues until the moment we draw our last breath. Throughout this journey, we fit into a persona that can be both consistent and situational. The identity of the individual can be perceived externally by those around him or her and the identity of the individual can be perceived internally by the individual. From the beginning of human thought and development humans have been driven by the uniquely human concept to wonder and question. As psychologists, we aim to accurately perceive and identify individuals by both their external and internal characteristics. We aim to effectively be able to measure individual-level characteristics to better understand and predict human behavior. One of the more studied methods of human behavior is the construct of personality. Personality is described as a set of traits that have a unique stable component and states that fluctuate from moment to moment (Horstmann, K. T., & Ziegler, M., 2020).

THE TRAIT-STATE PERSONALITY DILEMMA

The Big Five Personality traits of Extraversion (E), Neuroticism (N), Openness to Experience (O), Agreeableness (A), and Conscientiousness (C) have been regarded in the field of personality psychology as the standard model for decades. The Five-Factor Model of personality defines extraversion as the trait for social interaction amongst humans to interact with others at ease, while neuroticism is viewed as the negative trait for social comparison (McCrae & Costa, 1991) and overactivity of self-confidence. The following traits of openness to experience, conscientiousness, and agreeableness are viewed as having a positive effect on human

wellness by valuing their choices positively through going along with their independent choice of action (Howell, Ksendzova, Nestingen, Yerahian, & Iyer, 2017). In addition, individuals high in agreeableness present themselves as warm and loving, and conscientious individuals are hard-working and contributive to society (McCrae & Costa, 1991).

Early personality theorists (such as Freud, Jung, and Reich) considered personality across the lifespan of individuals and considered how life experiences shaped thoughts and behaviors. As the field progressed there was a shift towards standardized measures of personality such as the 'Giant 3' traits of extraversion, neuroticism, and psychoticism and the Big five personality traits. The shift towards trait theories was facilitated by the development of various personality measures. The Big Five has received a large amount of research across many areas and fields such as cognition, mood, leadership, engagement, and behavioral psychology. However, the present study aims to argue that although personality measured as a trait is beneficial there are facets of personality that have been largely overlooked. In our original definition of personality by Horstmann & Ziegler (2020) personality is described as a set of traits and states that can fluctuate from moment to moment. The field of personality psychology has been effective at measuring personality as a trait but has failed to effectively measure personality as a state. Essentially missing a large piece of the puzzle that makes up the personality of the individual. The aim of the present study is the development of a new personality scale based on the model of the Big Five that incorporates items that measure personality as a trait and as a state. So that we can better understand an individual's personality.

States are defined as a quantitative dimension describing the extent of coherent behaviors, thoughts, and feelings at a particular time (Baumert, A., Schmitt, M., Perugini, M., Johnson, W., Blum, G., Borkenau, P., & Wrzus, C. 2017). Although this definition of states is not linked to personality we would argue that most personality psychologists think of states as the manifestation of personality (Baumert et al., 2017; Fleeson, 2001; Fleeson & Jayawickreme, 2015; Wrzus & Roberts, 2017) and those most recent personality theories suggest that personality traits are expressed in states (Baumert et al., 2017; DeYoung, 2015; Eaton, South, & Krueger, 2009; Fleeson & Jayawickreme, 2015; Funder, 2001; Horstmann, Rauthmann, Sherman, & Ziegler, in revision; Horstmann, Rauthmann, & Sherman, 2018; Read, Smith, Droutman, & Miller, 2017; Sherman, Rauthmann, Brown, Serfass, & Jones, 2015; Tett & Burnett, 2003; Tett & Guterman, 2000; Wrzus & Mehl, 2015). The expression of a trait is therefore a trait manifestation or personality state (Horstmann, Rauthmann, & Sherman, 2018; Rauthmann, Horstmann, & Sherman, 2019; Horstmann, & Sherman, 2020). Horstmann & Sherman (2020) defined personality states as a multi-leveled state defined by current behaviors, thoughts, and feelings. Further, they defined a state measure as the aim to assess the manifestation of a personality trait in a random or pre-defined situation.

By better understanding the relationship between personality traits and states we can better distinguish between traits and their effectiveness in the personality state of the individual. According to Fridhandler (1986), personality traits are long-lasting for each individual in proportion to their sustainability to perform in various settings and vast amounts of years. However, there is a possibility of adapting to a specific environment impacting the individual's core traits by increasing or decreasing their sustain traits. In supporting this theory, Matz and Harari (2021) found that college students' Big Five personality traits were more likely to associate their traits with oriented locations with their higher valued traits, forming the notion of selection. Now the possibility of adjusting their traits to the situation of a given location was studied (Matz & Harari, 2021) in determining the effects location has on human traits. Thus, the given value for each trait to each individual confronts the idea of being adaptable at a young age through heredity and environmental upbringing (Fridhandler, 1986) to form a sequence of possibilities in differentiating others through these psychological examinations. Their core traits will continue to manifest by decreasing their specific traits and increasing others through adaptability to their environment. According to Howell et al. (2017), the behaviors of the individual are associated with the traits expressed through affective experiences within daily occurrences and the acts of thinking, feeling, and behaving (Matz & Harari, 2021). In proper hindsight, the scores humans are given for their trait value present themselves as of great importance to psychology and its field in understanding behaviors

across situations. This perhaps is the epitome of future discoveries for human science and its critical importance of an accurate scale.

The dynamic nature of personality has been tested with the conflict between personality influencing situational and environmental factors or the beliefs of internal and heredity factors. The state of the personality is reinforced through the environmental influence (Matz & Harari, 2021), the current personality at the time in space (Howell et al., 2017), and short-lived behavior of emotions and moods originating from the influence of situational effects has on the situation (Matz & Harari, 2021; Fridhandler, 1986). The study of Bueno, Sandoval, and Lilienthal (2021), focused on the situational factors COVID-19 had on personality and rumination, presenting situation-driven anxieties, which explain the increased need for psychological services post-pandemic. While the study aimed the interest toward personality traits, the researchers discovered an extensive input of the student's personality states influencing their likelihood of adapting to difficult situations (Bueno et al., 2021). Thus, the individual's state has a critical component in the daily functioning of individuals affecting their day-to-day choices. States are generally in line with the feeling at the present moment caused by a physical stimulus motivated by the individuals' trait (Fridhandler, 1986). These physical stimuli are subjective to the individual, aligning with age, financial responsibilities, substance use, social companions and activities, and time of day. Thus, as suggested in Howell et al. (2017), well-being is experienced with increased happiness and positive emotions because the state of personality is known to fluctuate compared to a personality trait.

Altogether, the effects of personality traits on the state are presented with a corresponding significance of a chain reaction caused by the trait throughout the day, given that the same domain provides the strongest predictor of trait to state, also known as the temperamental model (Howell, et al., 2017; Kritzler et al., 2020). While the state is highly codependent on traits, the state can be detected externally, unlike traits that are commonly inferred (Fridhandler, 1986). Furthermore, as the domain contradicts our trait personality, the state personality gives rise to a contracting trait personality derivative from the situation and physical stimulus. The effects of personality traits on the state are collectively called personality dynamics with situation contexts (Matz & Harari, 2021). The individual's typical behaviors align with their particular situations (Kritzler et al., 2020), but this is not always the case. In large, studies have been conducted for decades on the effects of state on changing personality traits. The behaviors of individuals (state) will adapt to their social environment depending on the duration of time spent in each domain, impacting their personality traits and state and their physical and mental wellness in adjusting to life satisfaction (Matz & Harari, 2021; Fleeson, 2001; McCrae & Costa, 1991). These finds are pivotal to developing personality change interventions (Matz & Harari, 2021) and anxiety and depression from social interactions. An updated and improved personality scale will facilitate the most accurate information for psychologists and students to monitor personality traits and states.

BIG FIVE PERSONALITY MEASURES

The Big Five Traits-Extraversion, Conscientiousness, Agreeableness, Openness, and Neuroticism emerged from decades of research and due to their ability to simplify an otherwise overwhelming number of traits, cross-cultural applicability, and their predictive validity (Zillig, L. M. P., Hemenover, S. H., & Dienstbier, R. A, 2002) continues to dominate the field of psychology yielding over 13,000 results among psychology databases (Feher, A., & Vernon, P. A, 2021). Within the framework of the Big Five personality model, various measures can be utilized. Among these measures, the NEO-Personality Inventory and the Big Five Inventory are widely used. The present study aims to expand the field of personality research by utilizing the framework of the Big Five Factor model to include personality measured as a state rather than just a trait. Personality as a state is important to measure because an individual's behavioral tendencies can fluctuate based on the situation/scenario that they are in. When including states and traits together as a whole we can understand how someone can adjust and adapt to situations in the short and long term. Based on how individuals can adapt to their environment we can predict the success and satisfaction of individuals. The environments that we live in are ever-changing from cultures to relationships. An individual's ability to adapt is crucial to the survival and happiness of the individual. Hence, the present study argues that personality research has failed in accurately

assessing how an individual's personality can change over time and fluctuate based on situational factors i.e., states. Not to say that previous personality research is not valid but needs to be expanded and has limitations.

THE LIMITATIONS OF PERSONALITY RESEARCH

Valid and effective research involves reducing researcher bias and perception when collecting and analyzing data. However, as humans as much as we try to control for biases it is impossible to do so. The way we perceive reality will influence the way that we perceive and present findings. Isomorphism refers to how something becomes similar over time. The study of isomorphism is mainly applied to institutions, but the same concept can be applied to personality research. As one personality theory becomes the dominant theory, personality research becomes isomorphic meaning it becomes similar. As previously mentioned, a simple search on ProQuest will result in over 13,000 findings related to the Big Five Personality inventory. Resulting in the field of personality research becoming too narrow and limiting our perspective to other possibilities. The present study aims to address this by presenting an alternative to the Big Five Personality Traits in which we can begin to perceive and interpret personality as both consistent and fluctuating over time. Like other factors in the field of psychology such as anxiety can be measured as both the state of being anxious and the general trait of anxiety (Spielberger, 1983).

DEVELOPING THE TRAIT-STATE PERSONALITY QUESTIONNAIRE

The first step in developing a scale is to identify and define the content being measured. The Trait-State Personality Questionnaire is based on the Big Five-Factor Model in that it uses the Big Five Constructs and reorganizes them as states and traits. Personality states are defined as a set of characteristics that can change over time depending on the situation and state of the individual. The Trait-State Personality Questionnaire (T-S PQ) aims to measure personality as both a state and a trait using newly created personality state items using the framework of the Big Five Personality Traits of extraversion, conscientiousness, agreeableness, openness, and neuroticism. Furthermore, the T-S PQ incorporates trait-based items to get a full understanding of personality. As part of the development of the T-S PQ different versions were developed to gauge the optimal method of scale measurement. Alternate versions of the scale were developed including a Likert scale, true or false, and a scenario-based multiple-choice option.

Conscientiousness

Conscientiousness is defined as an individual's tendency for organization, accuracy, and completion of tasks. According to Kritzler et al. (2020), individuals high in conscientiousness experience task-related situations for frequency. In the Likert scale model, we tested for organizational planning for daily tasks and assignments. For the True/False model, conscientiousness was measured by examining how well participants completed their responsibilities. In the scenario-based model, a multiple-choice format was presented to participants, with each statement aligning with six possible self-reported choices of lifestyle contributing to their traits. Based on the situation, the scenario may include making accommodations and timely matters. This was further explored to allow participants to self-report the statement rating high on conscientiousness.

Agreeableness

Agreeableness corresponds to the likelihood of volunteering their time to assist others resulting in feeling optimistic about their roles. Qualities of agreeableness express compassionate behaviors for others (Matz & Harari, 2021) and generosity towards others in social situations (McCrae & Costa, 1991). In the Likert scale model, we aimed at gathering information for assisting others in times of need. For the True/False scale model, we measured how likely participants were to help others in need and own up to mistakes. In the scenario model, we include choices of accepting others' opinions, non-confrontational, and customer

satisfaction. Similarly, participants self-reported the statement scoring high in agreeableness or low in antagonism.

Neuroticism

Neuroticism is characterized on the feelings of embarrassment and poor self-confidence of removal caused by specific scenarios. Individuals high in neuroticism have tendencies of emotionally unstable attributes in life situations, thus presenting a more negative lifestyle (Howell et al., 2017). The Likert scale model incorporated the concepts of poor health and negative mood. The True/False model measured neuroticism based on problem-solving and critical thinking. Scenario-based models used choice of response to present the neuroticism as frustrated, opinionated, and easily upset. Participants may score high in neuroticism or low neurotic trait/state, including emotional stability.

Extraversion

The questions connected to extraversion cover the state of surrounding oneself with others on ideas and views to express positive emotions. According to Howell et al. (2017), the ability to be socially outgoing by involving others in your activities increases positive and subjective well-being. The Likert scale model used extraversion by presenting statements with the participant's preference for group projects and social gatherings to improve their mood. The True/False scale model measured extraversion by examining how participants interact in outgoing situations. The scenario-based model encompasses choices of attending parties, speakers for groups, and conversations with strangers. Individuals presented scores in the range of high in extraversion or low in introversion.

Openness to experience

Openness to experience consists of the likelihood of trying new experiences like food dishes or social groups. This is supported by being open-minded (Matz & Harari, 2021) with the involvement of new experiences and ideas. The Likert scale model continued to use key concepts to represent new ideas and food choices. The True/False model was tested to see how willing participants were to go to new places and meet new people. The scenario-based model was presented with choices like adaptability to new changes, discovering opportunities, and finding siblings emotionally happy. Low levels of this trait are described as closed to experience.

TESTING THE PREDICTIVE VALIDITY OF THE TRAIT-STATE PERSONALITY QUESTIONNAIRE

To test the T-S PQ's predictive validity, the present study will examine the relationship between the big five personality traits, adaptability, and satisfaction with life. We further wanted to test the T-S PQ amongst other noticeable and influential factors to students, employees, and life choices. To capture our questionnaire predictive validity, we have used two recognizable testing means of adaptability and satisfaction with life. This would allow us to see if our questionnaire intended statements target the intended trait-state similarly to past studies.

The Relationship between Personality and Adaptability

Adaptability is the state of being at ease in new situations, environments, employment, and relationships. Previous research has not been conducted on developing a personality trait/state scale with an emphasis on an individual's ability to adapt. As previously mentioned, adaptability is crucial to the survival and success of the individual. Hence, incorporating adaptability into the scale will integrate our second dependent variable on satisfaction with life. Previous research has examined the relationship between the Big Five Personality traits and adaptability. Zacher (2014) examined adaptability at work known as career adaptability defined as a psychosocial construct involving individuals' behaviors and attitudes that increase their tendency

for positive emotions. Unlike personality traits, which consist of a change over extensive periods, adaptability in work settings can fluctuate in rapid short periods (Zacher, 2014), giving light to adaptive qualities consisting of traits and situational factors of work relationships.

In a longitudinal study, researchers studied the Big Five personality traits affecting adaptability during retirement (Hansson, Henning, Buratti, Lindwall, Kivi, Johansson, & Berg, 2020). Extraverts were seen to have a positive transition through actively socializing with others; likewise, openness was found to have a smooth transition to engaging in new activities, while conscientiousness consists of a coping mechanism to adjust to their new living space (Hansson et al., 2020). Moreover, control is a crucial factor in adjustment and satisfaction with life as shown in extraverts (Zacher, 2014), including lower stress levels, enhanced mood, and increased involvement in activities (Rettew, McGinnis, Copeland, Nardone, Bai, Rettew, Devadenam, & Hudziak, 2021) while neuroticism demonstrate a higher level of difficulty in adjusting to their development and work environment (Zacher, 2014) while losing key essential for retirees (Hansson et al., 2020). Agreeableness had a significant relationship with adaptability allowing individuals to establish new social connections and friendships while leading to a rise in life satisfaction (Hansson et al., 2020). Lastly, the effects of COVID-19 amongst college students impacted adjustment for neuroticism, contributing to maladaptive behaviors like rumination, while extroverts may also experience rumination with general anxiety (Bueno et al., 2021). In essence, adaptability has limits to how humans interact with change. Since the pandemic, society has been tested on whether change is sustainable regardless of personality traits, but as seen, adjustment to life events can be shortly impacted differently based on our traits. COVID-19 has taken a toll on humanity; thus, improving personality scales would give a more accurate response to satisfaction with life, adaptability, and worldly affairs.

Fagley (2012) when measuring the Big Five personality traits there is a missing subscale that includes an element of adaptability integrated with the Big Five traits. Since personality states can be ever-changing, adaptability is crucial to being able to understand the context of an individual's personality state. The adaptation of being put into different environments to evaluate how an individual can adjust. This brings an impact of characteristics on how our personality can be altered based on situational events. It is designed to assess participants' influence on the Big 5 personality traits/states and adaptability. The scales designed have brought significant differences compared to previous research studies. When taking a personality test the majority of the surveys are based on personality traits such as Fagley (2012) and Macdonald, Bore, M., & Munro, D. (2008). When incorporating personality states in the survey, the participants are put into a scenario and have to answer based on what they would do in that instant. This gives an accurate perspective of participants' personalities from developing extensive feelings within the scenario to expressing their true emotions. When not involving states or traits together, it is minimizing the results and the accuracy of how someone presents/perceives themselves. How individuals perceive themselves can influence their happiness. If you are happy with who you are, you are more likely to be satisfied with your life.

Personality and Satisfaction with Life

Satisfaction with life is defined as a representation of a cognitive and global evaluation of the quality of one's life as a whole (Pavot and Diener, 1993). To further explain the construct of satisfaction with life, we must understand the origins of satisfaction through the impact of traits and state personality. According to Specht, Egloff, and Schmukle (2013), the environment impacts satisfaction with life-based on the individual's personality trait. This environment can be made clear through the top-down and bottom-up model of life satisfaction. The top-down model argues the view of personality traits as the primary factor, while the bottom-up model encompasses the external and situational influence on the state of comfort (Ni, Li, Wang, 2021; Jovanović, 2019). In the continuum of Jovanović's (2019) study, there are suggestions for including these two views on personal infrastructure and life events as positive or negative. Positive views on life follow a better quality of life, including happiness and satisfaction. Rather the negative views on life incorporate a bleak and depressing state of emotion. Enforcing a highly optimistic view of life is brought to maintain an increase in cheerfulness, and self-esteem, and limits the negative external stimulus, presenting the information that happiness plays a role in life

satisfaction (Lau, Chiesi, Hofmann, Ruch, & Saklofske, 2020). Past studies have presented the findings of negative events have a greater effect on life satisfaction than traits, while other studies oppose these findings (Jovanović, 2019). Besides events, divorced parents will present a higher likelihood of their children developing a risk of short to long-term mental illness (Ni et al., 2021). In comparison, the atmosphere of life in domestic homes like non-divorced parents and no exposure to mental illnesses are related to increasing happiness, being emotionally stable, and a higher likelihood of positive events.

The probability of personality traits adapting or changing is probable depending on the effect of life satisfaction. Environmental changes causing maturation may adjust their lives into an optimistic life adaptive quality towards negative events (Specht et al., 2013). The relationship between personality and life satisfaction are interacts and interdependent on one another for present and future behaviors. It is considered that the effects of life satisfaction can be predicted by personality and vice versa, thus revealing a subjective and interpersonal effect (Ni et al., 2021).

In addition, the Big Five personalities are shown to influence the satisfaction of life by addressing the trait of happiness and better life quality. Extroverts expressed greater peer acceptance, friendship, and likeability (Jovanović, 2019) and were highly self-confident with good relationship building (Ni et al., 2021). As mentioned in the study of Specht et al. (2013), marriage does express a personality change primarily through the value and score of extraversion. Agreeableness and conscientiousness are traits with similar findings and agreeableness is observed in relationships who experience changes more positively (Specht et al., 2013) while conscientiousness presents substantial career success with higher life satisfaction (McCrae & Costa, 1991).

RESEARCH QUESTIONS AND HYPOTHESES

Based on the review of the literature we hypothesize that:

- Extraversion, conscientiousness, agreeableness, and openness will be positively related to satisfaction with life.
- Neuroticism will have a negative relationship with life satisfaction.
- Agreeableness and Openness will be positively related to adaptability.
- Adaptability and life satisfaction will be positively related.

2. STUDY 1

METHOD

Participants

Participants were recruited using snowball sampling and through the use of Mechanical Turk (MTurk). MTurk functions as an online site to distribute questionnaires to a large number of participants. Buhrmester, Kwang, and Gosling (2016) found that MTurk produced high-quality data and the benefits of using MTurk were (a) more demographic diversity; (b) realistic compensation rates do not affect data quality; (c) data is as reliable as traditional methods. Individuals met the participation criteria if they were 18 years of age or older. Since the present study involved the use of alternate forms, a larger and equal sample size was needed hence the use of MTurk. Sufficient data were collected from the SONA system and MTurk ($n = 597$; 240 male, 347 female, 10 non-binary/other). The age range of the participants was 18 to 84 years of age. Most participants identified them as White (61%), Latino (20.3%), and 9.4% and less identified as Asian, Black, American Indian, Pacific Islander, or other. All participants completed the survey voluntarily.

Measures

Big Five Inventory (BFI). The BFI is a 44-item self-report scale measuring personality facets as one of the following traits: Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness. Based

on a Five-Factor Model of personality, it uses a 5-point Likert scale for participants to rate their agreement with each statement. All participants were given this scale to ensure we were measuring its intended personality dimensions.

Personality Trait. The developed personality trait scale consists of a 10-item self-report measuring tool for personality traits: (e.g., I am someone who is shy, and keeps to myself) for extraversion, (e.g., I am someone who pays attention to details) for conscientiousness, (e.g., I am someone who often feels sad) for neuroticism, (e.g., I am someone who gets excited by new ideas) for openness, and (e.g., I am someone who accepts people for who they are) for agreeableness. Items are rated on a 5-point Likert-type scale (1 = strongly disagree, 5 = strongly agree).

Personality State Likert Scale Version. The developed personality state scale using a Likert-type response consisted of a 10-item self-report measuring test for personality state: (e.g., You plan an event for months, and now it is the day of the event. At the end of the event, you find yourself disappointed by the low number of attendees. To comfort yourself by speaking with friends or family to discuss options) for extraversion, (e.g., On assignments, you dedicate enough time spent on each question. By writing slowly and accurately, you establish a complete, neat, and correct effort on your tasks) for conscientiousness, (e.g., After a raffle, the winning ticket was won by Lucas. While you have been in the job for years but have never won the draw. You find the raffle being fixed and unfair, which leads you to avoid all raffles. At home, you avoid the conversation about the raffle due to feeling embarrassed) for neuroticism, (e.g., After joining an organization, you find yourself connecting with a rich, diverse group of individuals. You can make connections with every colleague at ease, conversing with new ideas) for openness, and (e.g., On weekends, you spend a great deal of time helping and encouraging others' happiness in a positive mindset. Through volunteering in charities, you can widen your number of friends) for agreeableness. Items are rated on a 5-point Likert-type scale (1 = strongly disagree, 5 = strongly agree).

Personality State True or False Version. The developed personality state scale using a dichotomous response contains a 10-item self-report measuring scale for personality state: (e.g., When I attend a social function, like a wedding, I like to be the first one to start dancing on the dance floor) for extraversion, (e.g., When I start to feel dehydrated, I set an alarm on my phone to remind me frequently throughout the day to drink water) for conscientiousness, (e.g., When I am stuck on a homework assignment, I usually give up instead of asking someone for help) for neuroticism, (e.g., Whenever I go on vacation, I like to try new local restaurants and foods that I have never had before) for openness, and (e.g., When I go to get food from a drive-thru, I like to pay for the person behind me) for agreeableness. Items are rated using a true or false response.

Personality State Scenario Based Version. Using a scenario-based approach, the developed personality state scale contains a 10-item scale for personality state. Each scenario was given six response choices for participants to self-report responding to, which best agrees to their likelihood of completing the action. For example, item one refers to if you lived with roommates and they started playing music loud. How would you approach this situation? Responses included: (e.g., Goes to their room and starts partying with them) for extraversion, (e.g., I'd put in my headphones so I don't have to start a confrontation for them to turn it down) for introversion, (e.g., Inform roommates a curfew for music to be played) for conscientiousness, (e.g., Start playing music louder than they are playing) for neuroticism, (e.g., Looks up song lyrics because your curious who the artist is) for openness, and (e.g., I enjoy listening to other people's music so I can get an understanding of different genres) for agreeableness. Items are rated using a multiple-choice response format.

Design

The present study was a non-experimental research design. The study was completed online and distributed via SONA, social media, and MTurk. Participants were introduced with an informed consent form followed by demographic questions such as age, gender, and ethnicity. Participants were randomly assigned to

one of the four newly developed trait or state personality scales and then took the BFI, Satisfaction with Life, and Adaptability scale.

RESULTS

Descriptive statistics

Big Five Inventory

Before running the descriptive statistics for the four developed scales on personality state and trait. We first examined the participants' personality traits to compare the developed scales to the experimental outcome. As a reminder, the BFI test was tested against our final combined scale with trait and state 20-items scale. The following test had a mean and standard deviation score on each trait of extraversion ($M = 3.07$; $SD = 1.26$), agreeableness ($M = 3.50$; $SD = 1.21$), conscientiousness ($M = 3.50$; $SD = 1.20$), neuroticism ($M = 2.87$; $SD = 1.29$), and openness ($M = 3.37$; $SD = 1.17$).

Personality Trait, Likert Scale Version

Second, we examined the means and standard deviations of the Big Five personality trait items that will be used for the Trait-State Personality Questionnaire. The mean and standard deviations for each of the five traits are extraversion ($M=3.31$; $SD=1.08$), agreeableness ($M=3.77$; $SD=.78$), neuroticism ($M=3.26$; $SD=1.17$), conscientiousness ($M=4.24$; $SD=.64$), and openness ($M=4.06$; $SD=.71$).

Personality State, Likert Scale Version

Table 2 represents the descriptive statistics of mean and standard deviation. Due to the Likert scale including neither agree nor disagree, individuals who did not place themselves in either scenario found themselves selecting three creating the mean score around three. The following were the computed values: conscientiousness ($M = 3.83$; $SD = 0.85$), agreeableness ($M = 3.65$; $SD = 0.96$), neuroticism ($M = 2.96$; $SD = 1.21$), extraversion ($M = 3.67$; $SD = 0.93$), and openness ($M = 3.55$; $SD = 0.99$).

Personality State, Scenario-Based Version

A scenario-based version received responses from participants ($N = 153$) across a situation in which participants were to select their response to the given scenario. The following values were measured in correspondence to their highest select state amongst each statement. Values were collected as the following: Statement 1 (S1) ($M = 3.01$; $SD = 1.60$), S2 ($M = 3.23$; $SD = 1.34$), S3 ($M = 2.90$; $SD = 1.81$), S4 ($M = 2.81$; $SD = 1.15$), S5 ($M = 3.41$; $SD = 1.53$), S6 ($M = 3.30$; $SD = 1.49$), S7 ($M = 3.15$; $SD = 1.61$), S8 ($M = 3.10$; $SD = 1.73$), S9 ($M = 3.75$; $SD = 1.65$), and S10 ($M = 3.80$; $SD = 1.82$). Introversion was recorded the highest in the style to listen to music ($S1 = 37.3\%$) and recovery process from weight gain caused by the pandemic ($S3 = 34.6$). Conscientiousness was seen the highest on a pop tire in the freeway ($S2 = 43.1\%$), activities completed after work ($S4 = 38.6$), being involved to a party ($S5 = 32.7\%$), job application ($S6 = 37.3$), group projects ($S7 = 28.8$), co-worker replacement shift ($S8 = 26.1\%$), and Disneyland preparation ($S9 = 27.5$). Openness to experience was seen as the most significant percentage of weekend plans ($S10 = 27.5\%$). While extraversion, neuroticism, and agreeableness were not captured at the highest percentages, each state was selected as a spectrum ($Min = 3.3\%$; $Max = 43.1\%$).

Reliability Analysis

To test the internal consistency of the created scale an item analysis was conducted on each of the scales. According to Pallant (2001) a value higher than a 0.6 is considered a high reliability and considerable index.

Personality State, Likert Scale Version

The Alpha Cronbach value ($\alpha = .624$) represented a high internal consistency. Furthermore, we tested for internal consistency using the Inter-Item Correlation Matrix to determine if each personality state correlates to their counterpart, as each state consists of two: conscientiousness ($r = .412$; $p < .001$), agreeableness ($r = .061$; $p = .243$), neuroticism ($r = .426$; $p < .001$), extraversion ($r = .183$; $p = .018$), and openness ($r = .194$; $p = .013$). Based on the correlation to each of their states, we concluded mild to moderate correlations with neuroticism and conscientiousness displaying the strongest positive correlation.

Personality State, True or False Version

Conscientiousness ($r = .176$; $p < .030$), Neuroticism ($r = .324$, $p < .001$), Agreeableness ($r = -.165$, $p < .042$). Based on the correlation between the three states, we concluded mild to moderate correlations with neuroticism displaying the strongest positive correlation.

Factor analysis

A confirmatory factor analysis was conducted to describe variability among the scale and to test the structure of the Trait-State Personality Questionnaire.

Personality State, Likert Scale Version

A Principal Component analysis extracting a fixed factor of five corresponding to each personality state, we concluded a total Initial Eigenvalues ($.899 > e < 2.382$). While using the extracting method, generalized least squared and Varimax, we found the following results. Component 1 with the highest sum total with conscientiousness ($e1 = .980, .374$), component 2 with neuroticism ($e2 = .986, .330$), component 3 with extraversion ($e3 = .354, .151$), component 4 with openness ($e4 = .954, .233$), and component 5 with agreeableness ($e5 = .095, .707$).

Personality State, True or False Version

Principal component analysis extracting a fixed factor five corresponding to each personality state, we recorded a total initial Eigenvalues ($.829 > e < 3.075$.) While using the extracting method, generalized least squared Varimax, we found the following results. Component 1 extroversion ($e1 = .685, -.017$), component 2 with the highest total Openness ($e2 = .909, -.046$), component 3 with Neuroticism ($e3 = .805, .270$), component 4 with Agreeableness ($e4 = .492, -0.73$), and component 5 Conscientiousness ($e5 = .554, .289$).

Scale and BFI

To Test for the concurrent validity of the Trait-State Personality Questionnaire the developed items were compared with those of the BFI scale.

For neuroticism, the following results have been collected: Spearman's ranked correlation was computed to access neuroticism from Personality State, Likert Scale version (N1), Personality State, True or False version (TFN2), and Personality Trait (TN1 & TN2) in contrast to the computed value for BFI of neuroticism (BFIN) score. There is a positive correlation between the N1 and BFIN, $r(130) = .302$, $p < .001$. There is a positive correlation between the TFN2 and BFIN, $r(151) = .163$, $p = .044$. There is a positive correlation between TN1 and BFIN, $r(157) = .372$, $p < .001$. There is a negative correlation between TN2 and BFIN, $r(157) = -.239$, $p = .002$.

For extraversion, using Spearman's ranked correlation, we computed to determine extraversion from Personality State, Likert Scale version (E1), Personality State, True or False version (TFE1), and Personality Trait (TE1 & TE2) contrary to the computed value for BFI of extraversion (BFIE) score. There is a positive correlation between E1 and BFIE, $r(130) = .366$, $p < .001$. There is a positive correlation between TFE1 and BFIE, $r(151) = .459$, $p < .001$. There is no correlation between TE1 and BFIE, $r(157) = -.124$, $p = .120$. There is no correlation between TE2 and BFIE, $r(157) = -.025$, $p = .757$.

For agreeableness, using Spearman's ranked correlation coefficient. We computed the correlation coefficient to determine agreeableness from Personality State, Likert Scale version (A2), Personality

State, True or False version (TFA2), and Personality Trait (TA1 & TA2) in comparison to the computed value for BFI of agreeableness (BFIA) score. There is a positive correlation between A2 and BFIA, $r(130) = .372, p < .001$. There is a positive correlation between TFA2 and BFIA, $r(151) = .226, p = .005$. There is a positive correlation between TA1 and BFIA, $r(157) = .297, p < .001$. There is a negative correlation between TA2 and BFIA, $r(157) = -.241, p = .002$.

For openness to experience, using Spearman’s ranked correlation coefficient. We computed the correlation for openness from Personality State, Likert Scale version (O1), Personality State, True or False version (TFO1), and Personality Trait (TO1 & TO2) in contrast to the computed value for BFI of openness (BFIO) score. There is no correlation between O1 and BFIO, $r(130) = -.021, p = .812$. There is a positive correlation between TFO1 and BFIO, $r(151) = .185, p = .022$. There is no correlation between TO1 and BFIO, $r(157) = .030, p = .706$. There is a positive correlation between TO2 and BFIO, $r(157) = .373, p < .001$.

For conscientiousness, using Spearman’s ranked correlation. We computed the correlation for conscientiousness from the Personality State, Likert Scale version (C1), Personality State, True or False version (TFC1), and Personality Trait (TC1 & TC2) in comparison to the computed value for BFI of conscientiousness (BFIC) score. There is a positive correlation between C1 and BFIC, $r(130) = .372, p < .001$. There is no correlation between TFC1 and BFIC, $r(151) = -.149, p = .066$. There is positive correlation between TC1 and BFIC, $r(157) = .299, p < .001$. There is no correlation between TC2 and BFIC, $r(157) = .130, p = .102$.

Table 1. Correlations

	Extraversion	Agreeableness	Conscientiousness	Neuroticism	Openness
C1	.106**	.091*	.166**	-0.052	0.064
A2	.109**	.145**	.092*	0.003	0.010
N1	-0.011	-.096*	-.086*	.124**	0.011
E1	.175**	0.014	0.048	0.005	0.034
O1	.129**	.083*	0.070	0.003	-0.015
TC1	.179**	-.123**	-0.071	0.062	0.024
TN2	.140**	-.109**	-.177**	.088*	0.001
TOE1	0.017	0.058	-0.011	-0.020	.098*
TOA2	-0.061	.123**	0.073	-0.030	0.026
TN1	-.161**	-0.072	-.117**	.185**	-0.057
TE1	-0.069	-.115**	-.104*	0.049	0.063
TA1	0.041	.109**	0.059	-0.066	-0.007
TO1	.106**	.106**	-0.008	-0.049	0.009
TC1	0.025	0.062	.178**	-.105*	.139**
TN2	.098*	.130**	.266**	-.128**	.086*
TE2	-0.021	-0.030	-.159**	.345**	-.096*
TA2	-0.021	-.131**	-.250**	.317**	-0.080
TO2	.164**	0.071	.130**	-.107**	.236**

TC2	.118**	0.030	0.063	-0.078	.320**
------------	--------	-------	-------	--------	--------

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

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

CONCLUSIONS

Study 1 aimed to develop a finalized version of the Trait-State Personality Questionnaire by testing different measurement methods. Findings highlight the limitations of the different methodologies. Upon collecting the data, the True or False scale limited responses to a yes or no option. In reality, personality is a spectrum where all traits or states are presentable to a certain degree. Limitation to the Scenario-based scale was brought on by the difficulties of forcing the participant to decide on the option their most likely option eliminating the other choices, which again goes against the personality spectrum. The scenario-based methodology i.e. multiple choice presented challenges when scoring the items to create a concrete variable. The Likert scale version of the Trait-State Personality Questionnaire had stronger findings. Therefore, a follow up study was conducted by transforming items/statements into a Likert format.

3. STUDY 2

To build upon the limitations of the first study a second study was conducted using a total of 84 items intended to measure the trait-state versions of the Big Five. Item and factor analyses were conducted to test the reliability and variability of the items to develop a final scale. The Trait-State Personality Questionnaire was broken down into 35 items rated on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree).

METHODS

Participants

Participants were recruited using snowball sampling and through the use of Mechanical Turk(Mturk). Individuals met the participation criteria if they were 18 years of age or older. Sufficient data were collected from the SONA system and MTurk (n= 352; 188 males, 164 females). The age range of the participants was 18 to 84 years of age. Most participants identified as White (82%), Asian (8.8%) black or African American (4.3%), and 6% and less identified as Hispanic or Latino, American Indian, Pacific Islander, or other. All participants completed the survey voluntarily.

Measures

Trait-State Personality Questionnaire. The Trait-State Personality Questionnaire is a self-report measurement tool that measures the personality of the individual to capture the trait and state perspective. The T-S PQ consists of 35 items rated on a 5-point Likert-type scale (1 = Strongly Disagree, 5 = Strongly Agree). 35 items are organized using extraversion, conscientiousness, agreeableness, neuroticism, and openness to experience.

Life Satisfaction. Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) was developed to measure cognitive judgment of life satisfaction. This measurement is a 5-item scale with a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree).

Adaptability. Adaptability Scale (Van Dam & Meulders, 2020) is a 5-point Likert scale (1 = fully disagree, 5 = fully agree) measuring employee adaptability in work settings.

Item analysis

In conducting a reliability analysis for Study 2 it consisted of 353 participants. Researchers collected data of our original statements from Study 1 allowing us to remove statements that limit a reduction of our Cronbach's Alpha score. With a 35-item questionnaire, we are able to obtain a Cronbach's α value of .928. Furthermore, our variables for the state of extraversion ($M = 3.81$; $SD = .971$), conscientiousness ($M = 3.92$; $SD = .923$), agreeableness ($M = 4.00$; $SD = .871$), neuroticism ($M = 3.61$; $SD = 1.151$), and openness to experience ($M = 3.94$; $SD = .877$); the trait of introversion ($M = 3.65$; $SD = 1.101$), conscientiousness ($M = 4.13$; $SD = .844$), agreeableness ($M = 3.92$; $SD = .938$), neuroticism ($M = 3.53$; $SD = 1.156$), and openness to experience ($M = 4.01$; $SD = .841$).

Factor analysis

The factorability was examined in the 35-item questionnaire. Firstly, it has been observed that the correlation amongst each of their corresponding variable; extraversion is at least .47 with the other extraversion state statements, conscientiousness is at least .23 amongst the other conscientiousness state statements, agreeableness is at least .16, neuroticism is at least .43, and openness to experience is at least .26, displaying reasonable factorability. To further support the Kaiser-Meyer-Olkin measure of sampling adequacy is .94. This 40% difference from the recommended value of .6. Bartlett's test of sphericity displays significance ($\chi^2(1770) = 11484.96$, $p < .05$). Furthermore, the communalities for all items are above .3 pointing toward the common variance of other items. These factor analyses seem to align with the 35-item T-S PQ.

FINAL SCALE

Table 2. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Agreeableness	352	1.70	5.00	3.9994	0.55228
Conscientiousness	352	1.90	5.00	3.9134	0.57924
Neuroticism	352	1.00	5.00	3.6060	0.88233
Openness	352	1.50	5.00	3.9375	0.57489
Extraversion	352	1.20	5.00	3.8048	0.72356
T_Introversion	352	1.00	5.00	3.6435	0.88836
T_Agreeableness	352	1.00	5.00	3.9219	0.73108
T_Conscientiousness	352	1.50	5.00	4.1222	0.64328
T_neuroticism	352	1.00	5.00	3.5227	1.03681
T_Openness	352	1.50	5.00	4.0085	0.68141

The final version of the T-S PQ includes a 35-item inventory (*see appendix A*) using five statements per state of personality and two statements per trait of personality. The measure is divided into two sections to analyze the trait of personality into long-term behavior patterns of acting, feeling, and thinking. In addition to the state of personality in the short-term stable characters. T-S PQ measures for personality, one's self-identity, and characteristics presented in public or private may change depending on their environmental location. The T-S PQ will incorporate a 5-Likert type scale to provide fewer overwhelming options for participants while reducing time completion compared to higher-point scales. The internal consistency reliability using Cronbach's Alpha ($\alpha = .928$). Furthermore, participants scoring higher on personality traits or states will exemplify a greater degree of the specific personality. See Appendix A for full scale.

Correlation between State and Trait Variables

Once the final version of the T-S PQ was developed a Pearson correlation analysis was conducted between state and trait version of the Big Five (See Table 3). Significant correlations were found except for the correlation between the trait versions of conscientiousness and neuroticism. Correlations between the Big Five traits and states were moderately significant indicating similar yet different constructs.

Table 3. Correlations between State and Trait Variables

	1	2	3	4	5	6	7	8	9	10
1. Agreeableness										
2. Conscientiousness	.73**									
3. Neuroticism	.47**	.50**								
4. Openness	.77**	.73**	.53**							
5. Extraversion	.63**	.66**	.58**	.72**						
6. T_Introversion	.31**	.38**	.52**	.35**	.35**					
7. T_Agreeableness	.60**	.57**	.39**	.61**	.49**	.28**				
8. T_Conscientiousness	.52**	.51**	.12*	.49**	.43**	.15**	.39**			
9. T_neuroticism	.31**	.32**	.66**	.31**	.27**	.54**	.24**	0.02		
10. T_Openness	.586**	.541**	.336**	.594**	.463**	.317**	.473**	.483**	.290**	

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

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

Correlation between T-S PQ and BFI Scale

To test for the concurrent validity of the Trait-State Personality Questionnaire we ran a Pearson correlation analyses to compare the trait and state versions of the Big Five with the Big Five personality traits of the BFI-Scale (see table 4). We did not find strong significance when comparing the two scales.

Table 4. Correlations between T-S PQ and BFI Scale

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Agreeableness															
2. Conscientiousness	.73**														
3. Neuroticism	.47**														
4. Openness	.77**	.73**	.53**												
5. Extraversion	.63**	.66**	.58**	.72**											
6. T_Introversion	.31**	.38**	.52**	.35**	.35**										
7. T_Agreeableness	.60**	.57**	.39**	.61**	.49**	.28**									
8. T_Conscientiousness	.52**	.51**	.12*	.49**	.43**	.15**	.39**								
9. T_neuroticism	.31**	.32**	.66**	.31**	.27**	.54**	.24**	0.02							
10. T_Openness	.59**	.54**	.34**	.59**	.46**	.32**	.47**	.48**	.29**						
11. BFIextraversion	0.08	0.10	0.05	0.07	0.07	0.02	-0.04	0.05	-0.03	0.05					
12. BFIneuroticism	0.04	0.01	0.02	0.00	-0.02	0.06	-0.09	0.02	0.05	0.00	.25**				
13. BFIagreeableness	0.08	0.06	0.03	0.06	0.06	-0.06	-0.06	0.05	-0.02	0.06	.50**	.40**			
14. BFIconscientiousness	-0.05	-0.03	-0.04	-0.03	-0.03	0.02	-.11*	-0.05	-0.05	0.00	.39**	.31**	.38**		
15. BFIopenness	0.09	0.10	0.09	0.08	0.05	.15**	-0.01	0.05	0.06	0.04	.47**	.38**	.29**	.46**	

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

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



PERSONALITY AND ADAPTABILITY

The relationship between the Trait-State Personality Questionnaire and adaptability was examined using a linear regression analysis. Both trait and state versions of the Big Five were found to be statistically significant at the .05 level. First, state of openness to experience was found to have the strongest relationship with adaptability $r=.765$, $f(1,351)=495.088$, $p<.01$ and $r=.579$, $f(1,351)=176.573$, $p<.01$ (trait). Second, state of agreeableness $r=.655$, $f(1,351)=263.990$, $p<.01$ and $r=.576$, $f(1,351)=174.520$, $p<.01$ (trait). Third, state of extraversion $r=.756$, $f(1,351)=468$, $p<.01$ and $r=.393$, $f(1,351)=63.974$, $p<.01$ (trait). Fourth, state of conscientiousness $r=.742$, $f(1,351)=429.697$, $p<.01$ and $r=.504$, $f(1,351)=119.13$, $p<.01$ (trait). Fifth, state of neuroticism $r=.514$, $f(1,351)=125.352$, $p<.01$ and $r=.285$, $f(1,351)=30.951$, $p<.01$ (trait).

Table 5. Model Summary

	R-value	F-Value	Significance
State-Openness	.765	495.08	.01
Trait-Openness	.579	176.57	.01
State-Agreeableness	.655	263.99	.01
Trait-Agreeableness	.576	174.52	.01
State-Extraversion	.756	468	.01
Trait-Extraversion	.393	63.97	.01
State-Conscientiousness	.742	429.69	.01
Trait-Conscientiousness	.504	119.13	.01
State-Neuroticism	.514	125.35	.01
Trait-Neuroticism	.285	30.95	.01

PERSONALITY AND SATISFACTION WITH LIFE

Table 6. Model Summary

	R-value	F-Value	Significance
State-Openness	.589	186.39	.01
Trait-Openness	.428	78.45	.01
State-Agreeableness	.617	215.64	.01
Trait-Agreeableness	.409	70.47	.01
State-Extraversion	.634	235.78	.01
Trait-Extraversion	.263	25.98	.01
State-Conscientiousness	.653	260.31	.01
Trait-Conscientiousness	.436	82.16	.01
State-Neuroticism	.456	91.68	.01
Trait-Neuroticism	.194	13.73	.01

The relationship between the Trait-State Personality Questionnaire and satisfaction with life was examined using a linear regression analysis. Both trait and state version of the Big Five were found to be statistically significant at the .05 level. First, state of conscientiousness was found to have the strongest relationship with life satisfaction $r=.653$, $f(1,351)=260.315$, $p<.01$ and $r=.436$, $f(1,351)=82.168$, $p<.01$. Second, state of extraversion $r= .634$, $f(1,351)= 235.78$, $p<.01$ and $r=.263$, $f(1,351)=25.98$, $p<.01$. Third, state of agreeableness $r=.617$, $f(1,351)= 215.64$, $p<.01$ and $r=.409$, $f(1,351)=70.47$, $p<.01$. Fourth, state of openness to experience $r=.589$, $f(1,351)=186.391$, $p<.01$ and $r=.428$, $f(1,351)=78.45$, $p<.01$. Fifth state of neuroticism $r=.456$, $f(1,351)=91.683$, $p<.01$ and $r=.194$, $f(1,351)=13.73$, $p<.01$.

4. DISCUSSION

The goal of the present study was to develop and evaluate a self-report measure of the Big Five personality traits. Whereas existing measures examined the Big Five as personality traits the present study aimed to develop a questionnaire that measures the Big Five as both personality traits and states. Two studies were conducted to construct and evaluate this scale. The first study set out to develop the scale and investigate its internal consistency and factor structure. Initially, the first study set out to explore different methods of measurement to be utilized in the new scale. The different methods of measurement included a Likert-based scale, true-false, and multiple choice. Based on item and factor analysis results it was concluded that the best method to use was the traditional Likert-based format. Furthermore, the goal of the present study was to develop a shorter scale of the Big Five however, the combination of both trait and state-based items resulted in a larger scale. The findings of the first study resulted in reworking the Trait-State Personality Questionnaire to only include a Likert scale with 60 original items.

Study 2 further explored the internal consistency and factor structure of the Trait-State Personality Questionnaire. Item analysis was conducted which resulted in reducing the number of items from 60 to 50. Confirmatory factor analysis resulted in reducing 50 items to 35 items in total to measure both the trait and state of the Big Five. Next study 2 aimed to examine the predictive validity of the Trait-State Personality Questionnaire by exploring the influence of the Big Five on adaptability and satisfaction with life. To examine this relationship a linear regression analysis was conducted to measure whether adaptability and satisfaction with life could be predicted based on the Big Five.

It was found that both the state-trait of the Big Five predicted levels of adaptability and satisfaction with life. Further, it was found that openness to experience and agreeableness were the strongest predictors of adaptability which supported the original hypothesis. Conscientiousness and extraversion were found to be the strongest predictors of satisfaction with life. Overall, it was found that the state version of the Big Five was a stronger predictor of both adaptability and satisfaction with life. This makes sense considering how the participant currently feels might influence the results of the study. Self-report measures are only able to measure how the participant currently feels about the current set of items. Since personality states measure the current state of the individual it makes sense that personality states were a stronger predictor of adaptability and life satisfaction.

5. LIMITATIONS AND IMPLICATIONS

Some limitations deserve mentioning. First, the scale was validated with self-report scales, which enhances the risk of method and source bias. Second, the use of different measurement methodologies in the first study impacted the reliability and validity of the original scale. Third, the present version of the Trait-State Personality Questionnaire includes more state-based items. Despite these limitations, the new Trait-State Personality Questionnaire has some implications for future research. An important issue is the development of personality scales. More research is needed to investigate how personality is measured and changes over time. Currently, the majority of personality studies examine personality as a set of traits that are reliable and consistent over time. However, the bulk of research does not consider how personality evolves and changes over time. Another limitation of personality research is that it is not consistent. Different studies tend to find

different results regarding the Big Five. The present study aimed to expand the field of personality by measuring the Big Five personality traits via other means such as the Big Five as personality states.

An improved scoring method could be used for the T-S PQ to help identify personality as a spectrum. As the five most common, popular personality traits and states are expressed in research, we firmly believe that each individual incorporates all personality values to a degree. Thus, as neuroticism is viewed as the most negative personality amongst the five, we would strongly encourage future research to improve the scoring method by recoding variables: (strongly disagree (1 to -2), disagree (2 to -1), neither agree nor disagree (3 to 0), agree (4 to 1), & strongly agree (5 to 2). This will limit the range from positives into a spectrum of -10 to 10, allowing participants to understand their personality better into five categories with ten types. In the example of neuroticism, we attribute this personality as unfavorable, while the opposite personality, which has not been researched nor openly discussed, would be positive. These ten types will include a balanced outlook towards personality with negative and positive personality types. This will expand our personality discovery and begin a new conversation on personality research. This will expand our personality discovery and begin a new conversation on personality research. Finally, due to some of the items mentioning "going to Disneyland", "watching Netflix", and "dancing" there can be issues with cross-cultural generalizability as not everyone that responds to the scale would be able to relate.

The present scale is promising for both research and practical purposes as it can be used as a general diagnostic tool for human resource development, team development, and counseling practices. The Trait-State Personality Questionnaire was a strong predictor of adaptability and life satisfaction both of which are important constructs in an ever-changing world. If we can better understand individual-level characteristics then we can predict how individuals will behave depending on the situation they are placed in. Furthermore, future studies should test the Trait-State Personality Questionnaire under different situations such as the trait scale depicting consistent scores and state scale changing depending on the situation.

6. REFERENCES

- C Schmitt, M., Perugini, M., Johnson, W., Blum, G., Borkenau, P., ... & Wrzus, C. (2017). Integrating personality structure, personality process, and personality development. *European Journal of Personality*, 31(5), 503-528.
- Bueno, R., Sandoval, C., & Kali Lilienthal, K. (2021). The Mediating Effects of Personality on COVID-19 Anxiety and Rumination. *Journal of Research in Psychology*, 3(2), 1-15.
- Buhrmester, M., Kwang, T., & Gosling, S. D. (2016). Amazon's Mechanical Turk: A new source of inexpensive, yet high-quality data?.
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, 49, 71-75.
- Fagley. (2012). Appreciation uniquely predicts life satisfaction above demographics, the Big 5 personality factors, and gratitude. *Personality and Individual Differences*, 53(1), 59–63. <https://doi.org/10.1016/j.paid.2012.02.019>
- Feher, A., & Vernon, P. A. (2021). Looking beyond the Big Five: A selective review of alternatives to the Big Five model of personality. *Personality and Individual Differences*, 169, 110002.
- Fleeson, W. (2001). Toward a structure- and process-integrated view of personality: Traits as density distributions of states. *Journal of Personality and Social Psychology*, 80(6), 1011–1027.
- Fridhandler, B. M. (1986). Conceptual note on state, trait, and the state–trait distinction. *Journal of Personality and Social Psychology*, 50(1), 169–174.
- Hansson, I., Henning, G., Buratti, S., Lindwall, M., Kivi, M., Johansson, B., & Berg, A. I. (2020). The role of personality in retirement adjustment: Longitudinal evidence for the effects on life satisfaction. *Journal of Personality*, 88(4), 642–658.

- Horstmann, K. T., & Ziegler, M. (2020). Assessing personality states: What to consider when constructing personality state measures. *European Journal of Personality*, 34(6), 1037-1059.
- Howell, R. T., Ksendzova, M., Nestingen, E., Yerahian, C., & Iyer, R. (2017). Your personality on a good day: How trait and state personality predict daily well-being. *Journal of Research in Personality*, 69, 250–263.
- John, O. P., & Srivastava, S. (1999). The Big-Five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (Vol. 2, pp. 102–138). New York: Guilford Press.
- Jovanović, V. (2019). Adolescent life satisfaction: The role of negative life events and the Big Five personality traits. *Personality and Individual Differences*, 151.
- Kritzler, S., Krasko, J., & Luhmann, M. (2020). Inside the happy personality: Personality states, situation experience, and state affect mediate the relation between personality and affect. *Journal of Research in Personality*, 85.
- Lau, C., Chiesi, F., Hofmann, J., Ruch, W., & Saklofske, D. H. (2020). Cheerfulness and life satisfaction mediated by self-esteem and behavioral activation: A serial mediation model. *Personality and Individual Differences*, 166.
- Matz, S. C., & Harari, G. M. (2021). Personality–place transactions: Mapping the relationships between Big Five personality traits, states, and daily places. *Journal of Personality and Social Psychology*, 120(5), 1367–1385.
- McCrae, R. R., & Costa, P. T. (1991). Adding Liebe und Arbeit: The full five-factor model and well-being. *Personality and Social Psychology Bulletin*, 17(2), 227–232.
- Ni, X., Li, X., & Wang, Y. (2021). The impact of family environment on the life satisfaction among young adults with personality as a mediator. *Children and Youth Services Review*, 120.
- Pallant, J. (2001), *SPSS survival manual - a step by step guide to data analysis using SPSS for windows* (version 10), Buckingham Open University Press.
- Pavot, W., & Diener, E. (2008). The satisfaction with life scale and the emerging construct of life satisfaction. *The journal of positive psychology*, 3(2), 137-152.
- Rettew, D. C., McGinnis, E. W., Copeland, W., Nardone, H. Y., Bai, Y., Rettew, J., Devadenam, V., & Hudziak, J. J. (2021). Personality trait predictors of adjustment during the COVID pandemic among college students. *PLoS ONE*, 16(3).
- Specht, J., Egloff, B., & Schmukle, S. C. (2013). Examining mechanisms of personality maturation: The impact of life satisfaction on the development of the Big Five personality traits. *Social Psychological and Personality Science*, 4(2), 181–189.
- Spielberger, C. D. (1983). *State-trait anxiety inventory for adults*.
- Van Dam, Karen, & Meulders, Michel. (2020). The adaptability scale: Development, internal consistency, and initial validity evidence. *European Journal of Psychological Assessment*.
- Zacher, H. (2014). Individual difference predictors of change in career adaptability over time. *Journal of Vocational Behavior*, 84(2), 188–198.
- Zillig, L. M. P., Hemenover, S. H., & Dienstbier, R. A. (2002). What do we assess when we assess a Big 5 trait? A content analysis of the affective, behavioral, and cognitive processes represented in Big 5 personality inventories. *Personality and Social Psychology Bulletin*, 28(6), 847-858.

APPENDIX

TRAIT-STATE PERSONALITY QUESTIONNAIRE DEVELOPED BY ROBERTO BUENO, CHRISTIAN SANDOVAL, KALI LILIENTHAL (2022)

Instructions: You will be asked to rate a series of statements that may or may not apply to you. For example, do you agree that you are someone who *pays attention to details*? Please rate each statement to indicate the extent to which **you agree or disagree with that statement.**

Trait-Items	
Is shy, and keeps to myself (I)	Enjoys eating alone (I)
Accepts people for who they are (A)	Trusts what people say (A)
Pays attention to details (C)	Follows through with my plans(C)
Gets stressed out easily (N)	Often feels sad (N)
Gets excited by new ideas (OE)	Has a vivid imagination (OE)

Instructions: You will be given a series of scenarios and asked to rate each statement based on the likelihood of how you would approach each situation.

1. If you lived with roommates and they started playing music loud. How would you approach this situation?
 - Start playing music louder (N)
 - Look up the songs because you are curious what they are listening to (OE)
2. After a long day of work, you are most likely to....
 - Attend a party with your friends (E)
 - Stay home and watch Netflix (E)
 - I had a long day of work so I'm going to stay home and relax.(A)
 - Go to a new restaurant that you found on the internet with your friends. (OE)
3. While applying for a new job, you add your job references. What are they most likely to say about you?
 - They have amazing customer service due to their energetic and outgoing personality. (E)
 - They are someone who you can depend on getting a task completed and are detail orientated. (C)
 - They hold a great attribute from customer empathy and compassion to help our customers to achieve their goals. (A)
 - They tend to get upset easily during tense situations. (N)
 - They are adaptable to new challenges and enjoy taking on new job duties. (OE)
4. This weekend, your friends are trying to plan an activity. What would you suggest?
 - Starts socializing with coworkers to help get suggestions. (E)
 - Tell your friends you cannot go and decide to watch Netflix instead. (N)
 - Starts searching for a new activity (OE)
 - Informs group what time they should meet up (C)
 - Listens to groups suggestions and go with their recommendations (A)
5. While being in quarantine, you realize you've gained weight due to frequent eating. From this realization, you...

- Make an appointment with a gym to check out equipment (C)
 - I don't think I'll be able to start a fitness journey due to weight gain. (N)
6. At work, you met new friends and they just asked you to come to a party with them. How do you respond?
- I have to check my schedule and I'll let you know if I can come (C)
 - Thank you for the invite! I'd love to come (A)
 - Yes! I love to go dancing (E)
 - Your family surprised you with Disneyland tickets for a family vacation. When you get to the park, you...
 - Gets Disneyland app and have a set schedule on what rides to go on (C)
 - Enjoys seeing their sibling happy (OE)
 - While driving with your friend, your tire pops. What would you do in this situation?
 - Comfort your stressed-out friend (A)
 - Get upset and state they should have checked their tires (N)