CAUSAL MODEL OF POSITIVE PSYCHOLOGICAL FACTORS AND SENSORY PROCESSING SENSITIVITY IN LATE ADOLESCENSE

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CAUSAL MODEL OF POSITIVE PSYCHOLOGICAL FACTORS AND SENSORY PROCESSING SENSITIVITY IN LATE ADOLESCENSE

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CAUSAL MODEL OF POSITIVE PSYCHOLOGICAL FACTORS AND SENSORY PROCESSING SENSITIVITY IN LATE ADOLESCENSE

BY

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HAS BEEN APPROVED BY THE GRADUATE SCHOOL IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE MASTER OF EDUCATION IN M.ED. (EDUCATIONAL PSYCHOLOGY AND GUIDANCE) AT SRINAKHARINWIROT UNIVERSITY

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The objectives of this research are as follows: (1) to compare the level of Sensory Processing Sensitivity (SPS) between two different groups of late adolescents, including a Highly Sensitive Person (HSP) and a non-Highly Sensitive Person (non-HSP); and (2) to explore the causal models of positive psychological factors, and SPS in late adolescence, which included 306 undergraduate students, majoring in the Faculty of Education from three universities in Bangkok, Thailand, who collaborated with members of the Council of University Presidents of Thailand, chosen by a simple random sampling technique. The research instruments are the general information scale and three psychological scales for undergraduate students (The Highly Sensitive Person, Psychological Capital (Psycap), and Self-Compassion, evaluated in five-rating scales). These three scales were determined with the Cronbach's alpha coefficient (α-coefficient) of 0.925, 0.909, and 0.852, respectively. All the data are collected and calculated in descriptive analysis (percentile rank, normalized t-score, and multiple correlation), and causal model analysis using Structural Equation Modelling (SEM). This research found that the level of SPS in the samples was normalized t-score at a percentile rank of 3.30-100.00. Furthermore, the results of SEM can explore the causal model of samples about 37.20% of model consistency to represent the samples, and statistical values consisted of Chi-square/degree of freedom about 2.3090 (p-value = 0.00059), GFI = 0.973, CFI = 0.980, NFI = 0.965, RMSEA = 0.0655, and SRMR =0.0694. Moreover, the Total Effect (TE) of the model was considered as TE = -0.66 between SPS and Self-compassion. In contrast, SPS and Psycap is considered as TE= 0.18. These studies are important to understand the effect of positive psychological factor in Thai undergraduate students to support their SPS level by enhancing the level of Psycap.

Keyword : Positive psychological factors, Sensory processing sensitivity, Late adolescence

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INTRODUCTION

Background

Late adolescence is a crucial development stage in the age range of 19-25 years, characterized by developmental growth in terms of physical, emotional, social, and intellectual development. Late adolescence is capable as individual ability to make own decisions and problems solving, using reasonable and analytical thinking, affected by external factors like an affinity relationship with parents, teachers, and friends, to significant promote, guide, and nurture adolescents to understand themselves, to facilitate their growth as finding identities. This stage can be described as a continuous turning point in life, as it involves critically deciding educational paths and career choices for pursuing higher education (Koolnaphadol, 2019, p. 4).

The developmental changes of late adolescence may lead to challenges in adaptation, especially late adolescents who cannot develop strategies for coping mechanisms during facing difficult situation in daily life or important effective event. Late Adolescence can be affected psychologically, emotionally, and behaviorally as a critical period (Koolnaphadol, 2019, pp. 2-3). In terms of negative psychological impact, it may manifest as mental health problems due to un-developing coping strategies and lead to be a symptom such as stress, depression, burnout, and anxiety, especially related to a personality trait known as Sensory Processing Sensitivity (SPS) who is generally overwhelmed by uncomfortable situation or external stimuli (Ishibashi et al., 2022, pp. 1-2).

Sensory Processing Sensitivity or SPS is a personality trait characterized by rapid responses to the surrounding in both positive and negative environments. SPS is an affected trait by genetic and environmental factors. Genetically, SPS can be considered a naturally evolved biological trait that maintain the humans and other living more than hundred species, approximately in total in our earth. It is assumed that 10-35% (Greven et al., 2019, p. 292) of the global population are considered having SPS, call Highly Sensitive Person (HSP). HSP can act aversively and supportively, associated

with easily sensory input and uncomfortable environments to control their thoughts and decision-making processes. The six abilities of HSP are emotional responding, relationship level with others, thinking, overstimulation, perceiving, and characteristics of sensitivity. In conclusion, the researcher in 1997 has revealed the main characteristics for SPS to identify HSP as three main subscales which are (1) Ease of Excitation (EOE), (2) Low Sensory Threshold (LST), and (3) Aesthetic Sensitivity (AES) (Bas et al., 2021, pp. 1-2).

Highly Sensitive Person (HSP) can show by biological factors and external environments to influence sensitivity. The environmental sensitivity is related by developmental context and reflect to HSP's characteristics, divided in three sub characteristics which are 1) General level of sensitivity, (2) Vulnerability sensitivity, and (3) Vantage sensitivity that be presented from neutral, adverse, and supportive environment respectively. Although, non-HSP can be affected from external environment as low sensitivity. Moreover, all HSP are commonly found among late adolescents, and they have been discovered that there is a gene known as 5-HTTLPR located on chromosome 17 (Pluess, 2015, pp. 140-141).

More studies are needed on the relationship between psychological traits and SPS. The study of psychological Capital (Psycap), which consists of hope, self-efficacy, optimism, and resilience (Boonkerd, 2015, p. 5), except for a study from Gulla & Golonka (2021) that could find a negative relationship between aesthetic sensitivity as one of the factors in SPS and resilience, which is one of the factors in Psycap, On the other hand, resilience can also have a positive relationship with low sensory threshold, which is also one of the factors in SPS. Psychological Capital is a positive psychological construct that promotes beneficial traits within HSPs. It encourages the development of a more optimistic mindset and thinking patterns through the self-talking technique. Thus, it is interesting to study the relationship between SPS and Psycap to explore the significant relation of other components of Psycap with sensitivity to find the way SPS is properly enhanced by Psycap encouragement among late adolescents with skills to self-develop in minds during unfavorable situations such as problems, obstacles,

disappointments, and academic challenges. The intention was to promote constructive thinking, emotional management, and a sense of well-being to lead a more satisfying life throughout their education (Kantasorn, Chulakadabba, & Punyapas, 2018, p. 155) (Luthans & Youssef-Morgan, 2017, p. 346) (Srisawat, 2015, p. 133).

Moreover, self-compassion, one of the positive personality traits, also influences an individual's perception of their abilities and shortcomings and their ability to control their thoughts and emotions, especially in undesirable situations (Thammarongpreechachai, Teerapong, & Wongpinpech, 2020, pp. 85-87). SPS oppositely relates to self-compassion; whether HSP can be more sensitive with a lower level of self-compassion, especially for mindfulness, is one of the factors of self-compassion, but no study indicates a significantly higher or lower level of SPS at a lower level of mindfulness. This study concluded with the recommendation of promoting mindfulness with sensitive people (Bakker & Moulding, 2 0 1 2 , pp. 341-342) . Self-compassion is an essential trait for meaningful living and self-development, and there is another study that has explored the relationship between academic distress and self-compassion, revealing that self-compassion can promote good well-being in undergraduate students by decreasing stress and academic grief (Chan et al., 2022, p. 1495). This is empirical evidence to support the importance of self-compassion that can study the relationship between self-compassion and SPS, aiming to gain a better understanding of late adolescence for more satisfaction in life and achieve self-satisfaction through the components of self-compassion, including mindfulness, self-kindness, and common humanity (Thammarongpreechachai, 2022, pp. 6-9). Therefore, it is also interesting to study the relationship between SPS and self-compassion to explore mindfulness and the significant relationship between other components, such as self-kindness and common humanity, and use this empirical information to understand late adolescence.

Thus, it is interesting to explore the relationship between sensory processing sensitivity and two psychological factors, Psycap, and self-compassion, including all their components in late adolescence as a sample group to enlighten all psychological

factors as novel information that can encourage late adolescence as an armour to protect each of them during uncomfortable situations and events and stand stronger during studying in university with good mental health.

Objectives of the Study

1. To compare the level of sensory processing sensitivity between two different groups of late adolescents which are a highly sensitive person and a non-highly sensitive person

2. To explore the causal models of positive psychological factors and sensory processing sensitivity in late adolescence

Significance of the Study

Academic significance

This research represents a study of a causal model of positive psychological factors about sensory processing sensitivity (SPS) in late adolescence. This variable has yet to be extensively researched in Thailand, making this study a more valuable starting point for exploring the empirical information for late adolescence within the country. The research is expected to explore the relationships between positive psychological factors that may influence SPS within a specific sample group. It should be noted that the selection of sample groups in this research is diverse in terms of gender, academic discipline, educational level, and student backgrounds, adding to the depth and breadth of the study's scope.

Practical significance

This research aims to guide late adolescents in undergraduate education, specializing in fields of study in education and pedagogy. Exploring positive psychological factors and SPS within this population can utilize effective coping strategies, especially for HSPs who may face undesirable situations or circumstances. Furthermore, this research can guide psychologists, guidance counselors, social workers, university professors, parents, and caregivers of late adolescence by applying

the insights gained from the causal model study of positive psychological factors and SPS for well-being in life.

Scope of the Study

Population

The population for this study consists of 4,588 undergraduate students from three universities located in Bangkok, Thailand, in the faculty of education that is a collaborated member with The Council of University Presidents of Thailand.

Sample

The sample in this research are undergraduate students in this population, a total of 306 participants, followed by two essential criteria, which are (1) the rule of thumb theory, as determined by the minimum sample from the ratio of one parameter: 10-20 participants (Schumacker & Lomax, 2010, p. 42). This research involves ten parameters and determined the minimum of 100 participants by simple random sampling; lastly, it derived 306 participants at a 95% confidence level and 5% error to the study of correlation and causal modeling analysis.

Variable

1.Independent Variables are positive psychological factors, divided into two parts, which are

1.1 Psycap consists of four factors

1.1.1 Hope

1.1.2 Self-efficacy

1.1.3 Optimism

1.1.4 Resilience

1.2 Self-compassion consists of three factors

1.2.1 Mindfulness

1.2.2 Self-kindness

1.2.3 Common humanity

2. Dependent Variable is SPS, which consists of three factors.

2.1 Low Sensory Threshold (LST)

2.2 Aesthetic Sensitivity (AS)

2.3 Ease of Excitation (EOE)

Definition of terms

1. Sensory Processing Sensitivity (SPS) refers to personality trait for undergraduate who is being sensitive to emotional stimuli from external and internal sources, resulting in negative impacts on an individual.

2. Positive psychological factors are psychological variables that positively affect in supporting and developing the understanding of late adolescence to get over the undesirable situation and obstacle. These positive psychological variables include psychological capital and self-compassion.

2.1 Psychological capital is positive psychological traits of human in self-development, leading to confidence and an understanding of their ability to overcome challenges and obstacles to achieve their life goals. Psychological capital consists of four components which are hope, self-efficacy, optimistic, and resilience

2.1.1 Hope is a psychological state that refers to a human's positive thoughts, feelings, and motivation, signifying a desire to achieve goals. Hope often relates to the three cognitive components: thoughts about goals, pathways, and self-determination. The associated factors include intelligence and social support as external factors, physical well-being, and personal experiences.

2.1.2 Self-efficacy refers to the personal state of someone with mature thoughts to believe in their knowledge and abilities as a positive concept to overcome obstacles in life, having the bravery to face problems as inner self-energy to fight negative thoughts such as anxiety. It is essential to consider self-efficacy in various dimensions. The strength dimension is recognizing humans during challenging situations, where their thoughts and emotions are typically inclined towards experiencing difficulties in life. The magnitude dimension involves a personal perception

of their abilities to evaluate their abilities in an obstacle situation, and the generality dimension is a person's feeling state regarding their self-perceived abilities.

2.1.3 Optimism is a positive psychological factor that refers to the concept of thinking for someone to explore and describe the event, situation, or story they are facing positively, including encouraging them to face problems. It is assimilation to physical growth, experience, and childhood fostering, including social learning.

2.1.4 Resilience is an individual's ability to adjust their negative mental state when facing obstacles and problems, eventually returning to a normal mental state.

2.2 Self-compassion is positive psychological traits as characteristics that demonstrate a capability to perceive events in life realistically and have a coping strategy consciously. Self- compassion consists of three components which are mindfulness, self-kindness, and common humanity.

2.2.1 Mindfulness refers to personal characteristics in the ability to perceive thoughts and emotions in the present moment and manage and express them naturally as normal.

2.2.2 Self-kindness refers to personal characteristics to perceive thoughts and emotions and express themselves with genuine love and empathy. Self-kindness is related to Buddhist principles, including the Eightfold Path. This involves understanding the Right view, principles, ideas, and beliefs according to self-acceptance, understanding, and self- awareness. Additionally, it aligns with the Four Noble Truths, particularly the self-kindness process to destroy human nature's negative aspects. Self-compassion is looking at internal suffering, the cause, and the way to stop suffering.

2.2.3 Common humanity is a human characteristic that can utilize their own stories and experiences, combining them to become part of the shared human experience. It links with thoughts and emotions to the extent that people can interpret

that every event and narrative in life is a part of life as an ordinary component of being human.

3. Undergraduate students are Thai nationality citizen aged between 19 and 25 years (in the late adolescent stage) . They are studying in universities located in Bangkok, Thailand, in the faculty of education that is a collaborated member with The Council of University Presidents of Thailand.

Conceptual Framework

This research focuses on undergraduate students aged 19-25 in the sample group who are easily sensitive to know and control negative traits within themselves, which may lead to understand of discovering the positive psychological characteristics within the sample group could potentially which correlate with SPS. The researchers have established the conceptual framework for the research study to investigate the causal factors of positive psychological factors related to SPS among late adolescents (Ussanarassamee, 2022) (Chompookard, 2017, pp. 1-14) (Srisawat, 2015, pp. 131-146). This framework is outlined as follows:

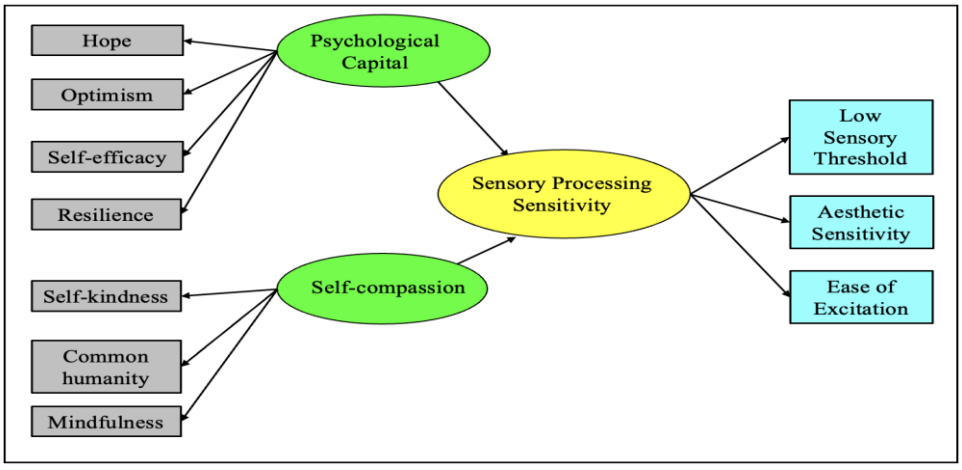

Figure 1 Conceptual Framework

(Ussanarassamee, 2022a) (Chompookard, 2017, pp. 1-14) (Srisawat, 2015, pp. 131-146)

Hypothesis

1. The level of sensory processing sensitivity between two different groups of late adolescents which are a highly sensitive person, and a non-highly sensitive person are significant different with positive psychological factors

2. There is a significantly causal relationship between positive psychological factors and sensory processing sensitivity in late adolescence, showed by the Structural Equation Model

CHAPTER 2
LITERATURE REVIEW

The related contents can be divided into four important topics as follows.

1.Sensory Processing Sensitivity (SPS)

2.Positive Psychological Factors

2.1 Psychological Capital (Psycap)

2.2 Self-compassion

3.Psychological Theories that related to positive psychological factors

3.1 Psychological Theories that related to psychological capital

3.2 Psychological Theories that related to self-compassion

4.Definition and nature of the late adolescence

1.Sensory Processing Sensitivity (SPS)

1.1 Definition and importance of SPS

SPS is a temperament and personality trait affected by the external environment and personal experiences (Aron et al., 2010, p. 220). People with have a SPS trait called HSP, are undoubtedly sensible and emotional, about 10-35% of people worldwide (Greven al., 2019, p. 292). The personality trait of HSP is characterized as an intense response to factors in both internal (e.g., sleep patterns, lifestyle, accumulated stress) and external (e.g., undermining language, pressure from people around, sunlight, loud or undesirable noises, objects, substances like coffee, or various activities such as physical exercise leading to physical discomfort) (Ishibashi et al., 2022, p. 1) (Aron et al., 2010, pp. 220-221). It can be stated that HSP can be observed as person of openness, agreeableness, and emotional sensitivity (neuroticism) (Trå, Volden, & Watten, 2022, p. 1).

1.2 The factor of SPS

The SPS in humans is originated from both external environmental factors and the continuous traits of genetic characteristics. The characteristics of an HSP individual can be observed through the following components:

1.2.1 Low Sensory Threshold (LST)

This HSP tend to heighten emotional reactivity expression, due to unique personally trait which is empathy with external environment especially more beneficial impact with positive environment. Conversely, they may react strongly negative in a hostile environment.

1.2.2 Aesthetic Sensitivity (AS)

This HSP easily respond to subtle external stimuli, such as scents, sounds, tastes, and tactile sensations. For example, they heighten highly sensitive to caffeine in certain beverages (e.g., tea and coffee), or notice movements or activities in their surroundings.

1.2.3 Ease of Excitation (EOE)

Due to their higher level of LST and AS compared to non-HSP, this trait represents mental sensitivity or easily excitable for experienced event or situation. As such, they tend to easily overstimulate by external stimuli. This heightened sensitivity can be advantageous in life, as it allows HSP to understand their uniqueness in different situations better and learn to adapt and develop their coping strategic and reflective thinking skills as a planned behavior (Samsen-Bronsveld et al., 2022, p. 2).

1.3 Biological Perspectives in SPS

HSP can respond to stimuli emotionally in both positive and negative aspects. This trait is found in humans from childhood through adolescence and adulthood, as well as in over 100 species. The level of SPS depends on environmental and biological factors.

The biological factor related in SPS of human are typically associated with genetics, psychology, and neuropsychology. Being an HSP is a natural selection in evolutionary. HSP often possess notable characteristics such as heightened observance, empathy towards others, and vigilance when facing adverse societal

events or situations. Consequently, living organisms can be maintainable with a symbiosis of HSPs and non-HSPs, with the latter group demonstrating a bolder and riskier approach to life compared to HSPs (Acevedo et al., 2018, pp. 1-2) (Ussanarassamee, 2022).

There is some research show the neurological structure and brain activity using functional magnetic resonance imaging (fMRI). In the brains of HSP, various areas are found to be active, including:

-The hypothalamus area is responsible for regulating homeostatic and pain.

-The Substantia nigra (SN) and ventral tegmental area (VTA) areas are associated for reward processing which is a form of positive reinforcement.

-The lateral fissure and insular lobe areas involved in empathy trait and self-processing.

-The Temporo-Parietal Junction (TPJ) controls perception and reflective thinking, and

-The Pre-Frontal Cortex (PFC) controls self-control.

In summary, HSPs tend to understand others by traits of heightened empathy, emotional reactivity, self-reflection, and self-control. HSPs that live in a favorable environment where HSP feel secure and easily harness their intrinsic genetic traits. In this case, they can feel having happier life (Acevedo et al., 2018, pp. 2-4).

1.4 Types of SPS

Since genetic and environmental factors influence SPS of people, it is challenging to categorize people as either highly SPS or non-SPS. This is because non-HSP also sensitive under specific conditions that cause discomfort, resulting in temporary negative traits. However, research found distinct groups of people with low, moderate, and high levels of SPS for approximately 20-35% : 41-47% : and 20-35%, respectively (Greven et al., 2019, p. 292).

Defining the level of sensitivity in people based on biological characteristics, people can generally be grouped into two categories: those with genes

expressing of SPS and those without. Therefore, the expression of genes related to SPS, influenced by genetic and environmental conditions, can be categorized to these following categorizations:

Non-Highly Sensitive Person (Non-HSP):

(1) Low sensitivity person

People in this group do not sensitive in both comfortable and uncomfortable situations, Low sensitive person generally unaffected by their environment, except during specific events or situations that temporarily impact their mental state.

Highly Sensitive Person (HSP):

Research has indicated that people who has the 5-HTTLPR or SLC6A4 genes, which are part of the serotonin transporter gene located on human chromosome 17, expressed by a combination of genetic and environmental factors (Nueangjaknak, 2021, pp. 47-56). These people with such genes have been linked to various SPS, including:

(2) General sensitivity person

This is a group of HSPs who live under neutral environmental conditions, causing mild to moderate level of sensitivity.

(3) Vulnerability sensitivity person

HSPs who live under adverse or unfavorable environmental conditions, can significantly increase sensitivity levels depending on the nature of the triggering events or circumstances.

(4) Vantage sensitivity person

This is a group of HSPs who live under favorable environments (positive events, situations, or supportive social environments). This heightened sensitivity can benefit personal growth and development of human (Pluess, 2015, pp. 140-141).

1.5 Advantages and disadvantages of SPS

Although SPS be viewed in negative trait as people who tend to keep their emotions to themselves, as they may often experience heightened stress and anxiety or seek attention, HSPs have the potential to understand themselves, adapt, and learn as a motivated ability to manage the impact of external stimuli on their mental state for several advantages. For instance, HSPs can be skilled at observing the thoughts and emotions of people around them. They can effectively reflect the atmosphere of a people engaged in deep discussions. These skills can be especially beneficial to pursuit careers or further their education in fields that comfortable use this trait for learning and personal growth encouragement due to the ability of accepting their own present experiences (Bakker & Moulding, 2012, pp. 341-342).

1.6 Theories related to SPS

1.6.1 The Psychoanalytic Theory

The Psychoanalytic Theory, developed by Austrian psychiatrist named Sigmund Freud, is a psychodynamic theory group in personality psychology. People can undergo personality changes due to genetic factor and environmental conditions. It can explain the nature of human personality, followed by these sub-theories:

I. Levels of mind

This theory describes the structure of the human mind, divided into (1) the conscious level, where human are aware to use their rationality to self-evaluation and express themselves; (2) the preconscious level, where reflections on human's inner self from the conscious level express to behave, such as dreams, and (3) the unconscious level, which is the level of mind that keep in order to homeostatic desires, fears, and pain are stored, and this is uncontrollable.

II.Structure of personality

This theory can explain the Structure of personality of human, categorized to these three parts (1) the ID, representing the most primitive part of the psyche, encompassing basic life needs such as hunger, thirst, and sexual desires. It operates with minimal restraint and begins to develop around the age of two. (2) The Super-ego, a connection to internal moral values instilled through upbringing and

learning, developing from age three. (3) The Ego is the part of the psyche that perceives the external environment realistically, functioning through the coordination of the ID and Super-ego.

lll.Psychosexual Development

This component involves stages in human development occurring from birth through adulthood, including (1) the oral stage, 0-2 years old, (2) the anal stage, 2-3 years old, (2) the phallic stage, 3-6 years old, (4) the latency stage, 6-11 years old, and (5) the genital stages, more than 11 years old.

lv.Defense mechanisms

Defense mechanism is a self-mechanism into human personality. These are psychological mechanisms that serve as defense mechanisms to protect and control the human from undesirable thoughts, emotions, and feelings. Such as repression, suppression, fantasy, displacement, reaction formation, idealization, and devaluation. (Kaewsawang, Eamprapai, & Koomsiri, 2022, pp. 155-157)

Research indicates that HSPs correlate with being covert hypersensitive narcissists, which influenced by emotional instability as one of characteristic of being SPS (Jauk et al., 2023, pp. 228-249). Therefore, it is important to study HSPs by using psychoanalytic theory and other psychodynamic concepts as a grounded theory to gain a deeper understanding late adolescence as a population for future research.

1.6.2 Gray's Reinforcement Sensitivity Theory (RST)

The Reinforcement Sensitivity Theory was developed by British psychologist named Jeffrey Alan Gray (J. A. Gray). This theory focuses on the personality differentiation of human based on responses in two fundamental motivational systems: the Behavioral Inhibition System (BIS) and the Behavioral Approach System (BAS). BIS and BAS are responsive to various environmental stimuli, each affecting distinct brain structures. The BIS is activated by stimuli associated with positive or negative reinforcement such as rewarding and punishment, leading to behave as anxiety and fear behaviors. In contrast, the BAS is associated with approach activated

behaviors to the Fight/Flight/Freeze System (FFFS) as of forms of negative expression from negative responses (Bijttebier et al., 2009, pp. 421-422).

Research has indicated the levels of the various systems from the RST theory can impact a human's personality traits such as the high and low BIS levels that express anxiety symptoms, and signs of attention-deficit hyperactivity disorder (ADHD). On the other hand, human with the high and low BAS levels will express behavior of the Conduct Disorder, and symptoms of depression. Moreover, human who have both BIS and BAS, reported in children and adolescents, tend to sensitive for stimuli, develop negative behavior patterns and risk to diagnose in the psychopathological conditions (Bijttebier et al., 2009, pp. 422-428).

Given these findings, it is essential to apply the RST theory to understand better late adolescence who is easily responsive to environmental stimuli and provide valuable insights from a biological view.

2.Positive Psychological Factor

Positive Psychological Factor is factors that focus on understanding human as a full potential to encourage for being in normal level of well-being (Luthans & Youssef-Morgan, 2017, p. 340) as it can be related to the following factors.

2.1 Psychological Capital (Psycap)

2.1.1 Definition and importance of Psycap

Several researchers, both foreign and Thai, have defined the concept of Psycap from various perspectives:

Luthans and Youssef-Morgan (2004) state that psychological capital is a positive mental state in human that signifies growth and development.

Chen et al. (2019, p. 1) describe psychological capital as a positive mental state regarding personal development, leading to satisfaction in human's professional life, health, and psychological well-being.

Kantasorn, Chulakadabba, & Punyapas, (2018, p. 155) state that psychological capital is a concept idea from positive psychology, which aims to study human behavior to encourage and develop positive characteristics.

Pacharasathien and Yoelao, (2021, pp. 613-616) define psychological capital as positive psychological traits of human that are developable and changeable according to circumstances.

Sarutikriangkri et al., (2020, p. 68) suggest that psychological capital is related to positive emotions, creative thinking, and its impact on life success.

In summary, Psycap refers to positive psychological traits as a state that human can be developed and enhanced own capabilities based on various circumstances

2.1.2 The factor of Psycap

Psycap is consists of the following components:

2.1.2.1 Hope

Hope is a psychological state that refer to human's positive thoughts or feelings and motivation, signifying a desire to achieve goals. Hope often relates to the three cognitive components which are thoughts about goals, pathways, and self-determination (Pacharasathien, 2019, p. 78). The associated factors include intelligence and social support as external factors, physical well-being, and personal experiences (Boonkerd, 2015, p. 19)

Furthermore, the cognitive models to encourage hope in consist of the following:

(1) Agency Thinking, which is determined thinking to lead life plan for desired outcome

(2) Pathway Thinking, which is thinking for progressing towards anticipated goals, utilizing various strategies and diverse pathways.

(3) Goal Thinking, which is thinking's type of striving to achieve anticipated objectives (Boonkerd, 2015, pp. 18-19).

The hope as a unique psychological state of each human convinces some researchers consider as a dispositional trait that is unstable. However, another group of researchers believes hope is a developmental state during human's life cycle. Consequently, the latter group has described various approaches for hope distribution within the human's mind, as follows:

I. Goal setting which involves setting objectives and finding motivation to create hope in life.

II.Stretch goals that is challenging goals that stimulate human's interest and excitement.

III.Goal stepping, which is a level of setting challenging goals, it can make difficulty in achieving success but starting from small things, easy to manage and control can increase self-motivation in life.

IV.Innovation: Focusing on goals that benefit human as individual and society to encourage and promote hope that relate to creativity and innovative thinking.

V.Reward systems: It is one of the positive reinforcement ways through presenting reward to enhance a human's hope by creating a sense of achievement.

VI.Resource management: In the context of student learning, resources that facilitate learning, such as information technology and learning materials, can improve accessibility to information, stimulate critical thinking, and help students achieve their educational goals.

VII.Strategic alignment: Aiming to encourage human to analyze their strategies for living such as strengths and weaknesses to increase internal hope.

VIII.Training: Training and development can enhance competencies and skills for human (Pacharasathien, 2019, pp. 84-88).

2.1.2.2.Self-efficacy

Self-efficacy refers to personal state for someone who have mature thought to believe in their knowledge and abilities as a positive concept to overcome obstacles in life, having bravery to face the problem as an inner self energy to fight with negative thought such as anxiety. It is essential to consider self-efficacy in various dimensions as these following:

(1) Strength Dimension as recognizing of human during facing with challenges situation, where their thoughts and emotions are typically inclined towards experiencing difficulties in life.

(2) Magnitude Dimension, this dimension involves a personal perception of the abilities to evaluate their abilities with the obstacle situation.

(3) Generality Dimension: It is a person's feeling state regarding their self-perceived abilities (Pacharasathien, 2019, p. 78).

Factors influencing self-efficacy include:

I. Performance Attachment or Enactive Mastery Experience which is a factor of confident for self-encouragement as abilities of human from past experiences of success genuine efforts.

II. Vicarious Experience: To observe the other person's achievements with similar experiences and successes in life, this related example can enhance self-efficacy.

III. Verbal Persuasion: This factor is considered to an easy way to increase self-confidence encouragement.

IV. Physiological and Emotional Arousal: Each person has a different sensitivity capability to physiological and emotional stimulation. People who handle negative physiological and emotional stimulation smoothly are more likely to have high level of self-confidence and emotional stability, and are less in despair (Boonkerd, 2015, pp. 15-16)

2.1.2.2. Optimism

Self-efficacy is a positive psychological factor that refer to the concept of thinking for someone to explore and describe in the event, situation, or story that they are face in positive way, including encourage them to face problems (Pacharasathien, 2019, p. 22). It is assimilation to physical growth, experience, and childhood fostering, including social learning (Boonkerd, 2015, p. 22) as it is essential to consider that self-confidence can be assessed in various dimensions:

I.Personalization Dimension: This is dimension to explain the personal thought during human who are facing an unfavorable and disruptive situations or events, their perception decision depends on between the way they blame themselves, others as, or flip to view in positively way

II.Permanence Dimension which is the dimension abilities of human when facing with uncomfortable events or situations, it is a personal interpretation to define the level of the event as long-lasting or temporary to affect their physical and mental well-being for an early period of thought.

III.Pervasiveness Dimension: This is dimension of human perception during confronting unfavorable events or situations, they may either perceive each event as selectively affecting their mental state temporary and having an impact them currently or perceive that each event as really impact and relate to every part of their life (Boonkerd, 2015, p. 21).

2.1.2.2. Resilience

Resilience is an individual's ability to adjust their negative mental state during facing obstacles and problems in life, and eventually return to a normal mental state. Resilience can be divided into five characteristics as follow:

(1) The ability of adaptability to challenging situations or events.

(2) The ability of flexibility under severe stress conditions.

(3) The ability of recovery from distress and hardness in life.

(4) The ability of maintaining the status under different circumstances in normal.

(5) The ability of self-stability during in challenging situations (Pacharasathien, 2019, p. 78-79).

In summary, resilience depends on the other factors which are the personally characteristics, situations and events opportunities for occurrence, and the personal perception, beliefs to identify the value of life that refer to view the importance personal resilience (Boonkerd, 2015, p. 24).

2.2 Self-compassion

2.2.1 Definition and importance of self-compassion

Self-compassion is a form of managing thoughts, referring some people who live in the present time. Therefore, self-compassion means conceptual thought in alignment with moral principles, enhancing emotional strength and fostering strong self-esteem (Tuntatead et al., 2014, pp. 1-2). In another sense, self-compassion implies a person who receive the story or event in multiple ways with well understanding throughout pain, misery, and happiness of their own life experiences, and viewing as a part of life in order manage mindfulness and self-acceptance to effectively deal with problems or factors that affect thoughts and emotions (Katesook, 2020, p. 13).

2.2.2 Factors of self-compassion

Self-compassion consists of three components that can be categorized as follows:

Category 1: Mindfulness

1.Mindfulness refers to personal characteristics in ability to perceive thoughts and emotions in the present moment, manage, and express them naturally as normal.

Category 2: Wisdom has two sub-categorizes which are as follow.

2.Self-kindness refers to personal characteristics to perceive thoughts and emotions and express themselves with genuine love and empathetic understanding. Self-kindness related to Buddhist principles, including the Eightfold Path. This involves understanding the Right view principles, understanding ideas, and beliefs according to self-acceptance, understanding, and self-awareness. Additionally, it aligns with the Four Noble Truths, particularly the process part of self-kindness to destroy the negative aspects of human nature. Self-compassion is truly looking in an internal suffering, the cause and the way of stop being suffer.

3.Common Humanity which is a human characteristic that can utilize their own stories and experiences, combining to become part of the shared human experience. It links with thoughts and emotions to the extent that people can interpret

that every event and narrative in life is a part of life as an ordinary component of being human (Thammarongpreechachai, 2022, pp. 3-4).

3. Psychological theories that related to positive psychological factors

3.1 Psychological theories that related to psychological capital

(I) Solution-Focus Brief therapy (SFBT)

SFBT is the concept of self-reliance of humans, based on the belief that humans have the strength and efficiency to find the solution properly, which is a positive change without necessarily figuring out the core reason for the problem. It can be assumed that this therapy is a rapid solution-based theory for humans.

Techniques that can be applied to this therapy are as follows.

(1) The miracle questioning technique aims to encourage the situation during counseling by allowing the counselee to find the solution to the miracle question that creates fantasy thoughts that refer to assuming need.

(2) Exception questioning technique, with the expression of a counselor mentioning the problem that is not permanent and powerless to control one's thought. This technique will encourage humans to boost their energy from self-reliance to self-efficacy and enlighten the problem solution by themselves.

(3) Scaling question, which is an openly telling the level of problem in a current uncomfortable situation and turn to a positive way for success. (Ngammoh, Inang, & Koolnaphadol, 2017, p. 92)

(II) Rational Emotive Behavior Therapy (REBT) theory

REBT was developed by Dr. Albert Ellis, an American clinical psychologist, who defined and used REBT as a psychotherapy theory used in a therapy program based on the personal perspective that affects their rational thought, emotions, and behaviors. REBT aims to help people who has a negative thought (irrational thought) to reframe mindset, and change emotions, and behavior in proper way. There are concepts of viewing the nature of human based on this REBT theory as follows:

REBT aims to understand that human is different from other living because the self-decision to make their own beliefs to change for their live ideally by

learning the way of thinking rationally as a beginning of life success. REBT believes that human is born with an efficiency to be a rational living. They sometimes have an irrational thinking because of experiences and learning since childhood to adulthood, observed by the informal emotions and behaviors with feeling of hopeless to estimate themselves as an unworthy in live.

There is a relationship between thoughts, emotions, and behavior as it can be noticed such as the consequences of irrational thought by of bias, self-centered, and irrational thinking. This is the unstable emotions that is a symptom of psychological disorder. An irrational thought begins since in early stage of life as children who gain this from external factors like parenting style, environment, and social effect.

Counseling program which based on the REBT theory aims to assist counselee to enlighten the causal belief for negative thoughts. The emotions have two types that are appropriate positive feeling and inappropriate positive feeling. The counselee who understands themselves and start to except their inappropriate feeling, will know the latest situation with more responsibility to clarify the more suitable way to leave in each situation with more level of self-confidence and stop blaming themselves. Furthermore, REBT theory is based on the A-B-C Framework as the fundamental theory in counseling program which consist of A (Activating Event), B (Belief), and C (Consequence), using with essential techniques as follow.

(1) Questioning technique, aiming to encourage the situation during counseling by opportunity of counselee to answer questions from counselor for self-exploration.

(2) Listening technique, with the expression of counselor with caring, showing with active and empathetic listening.

(3) Disclosing oneself, which is an openly telling story to make counseling ‘s vibe is more relaxing.

(4) Reflecting feeling technique, as it is a reflective listening technique to express the current thoughts, emotions, and behaviors within with self-acceptance and understanding.

(5) Interpreting technique, This is technique to predict the cause of problem by considering various point of view to think about the problem and start the way of solutions.

(6) Suggesting technique, it can be used this technique for feedback within the counseling program, especially in group counseling for self-developing, or tips for doing assignment after the session.

(7) Supporting technique, it is a way to encourage the relationship during counseling program between counselor and counselee.

(8) Summarizing technique, It is a conceptualize technique to summaries problem. (Junsorn, 2018, pp. 29-35)

(9) Reframing technique, to change the point of view

(10) Rational-emotive imagery which is the technique to make a fantasy to rational and emotive imaginaries (Srisawat, 2018, p. 12).

Moreover, there is previous research has studied an empirical assessment of REBT model to explore the relationship the negative symptoms which are anxiety and depression in undergraduate student. The results showed that there is a relationship in this positive model with the negative outcome (Oltean et al., 2017), including another study from Noormohamadi et al. (2019) that showed the effective relationship of using REBT as a counseling program with undergraduate student and it could decrease the level of anxiety but increase the level of resilience.

(III) Really Therapy (RT) Theory

The theory of RT counseling was developed in 1965 by William Glasser who believes that human is good and has an ability to have a self-responsible. This counseling theory also mentioned about human identity in who opposite ways which are success identity and failure identity. on the goal of problem-solving by their own strengths and flexibility. The theory aims to assist perspective of human for the possibility to choose the way from those following two, accept the way they choose, and be ready to accept the consequences of choice. Furthermore, RT theory relates to two sorts of behavior which are familiar and adaptive behaviors that developed by four parts

which are Acting/Doing, thinking, Feeling, and Physiology, with the shaping of conceptual thought to lead for behavior change, lastly finding themselves as the higher level of self-value. (Naimthanom, Inang, & Srichannil, 2022, p. 179) Furthermore, RT theory is based on the W-D-E-P Framework as the fundamental theory in counseling program which consist of W (Want), D (Direction & Doing), E (Evaluation) and P (Planning), using with essential techniques as follow

(1) Building relation technique which is referred to unconditioned positive regard and confidential policy of counseling of counselor.

(2) Questioning technique, as a technique to know more information from counselee by giving an opportunity for self-exploration.

(3) Confrontation technique, to calibrate a mix of thoughts and emotions of counselee.

(4) Humor technique which is a normal technique for keeping good relationship between counselor and counselee during session.

(5) Point-out technique which refers to explore an unresponsive thought.

(6) Advice technique, which is to explore how counselor's systematic behavior work and how they response

(7) Self-disclosure technique which to open thoughts, obstacles, and experiences of counselee

(8) Interpretation technique which is the way to support counselor to observe the counselee emotion, movement, verbal, and body languages (Chanpradab, 2011, pp. 32-33)

Utilizing Psycap which is a positive state-liked psychological factor in the study of HSP through the theoretical framework of counseling can enhance the level of Psycap (self-efficacy, resilience, and hope) for a living. It a positive perspective toward when facing mental and emotional sensitivities (Tuntatead, Phatharayuttawat, & Manusirivithaya, 2014, pp. 73-75). There is another research further supported that enhancing Psycap which is a positive psychological factor can be applied in group

counseling program based on applying with RT and REBT counseling theories with related techniques such as increase the higher level of optimistic from RT theory, and increase the higher level of optimistic from REBT theory (Srisawat, 2015, pp. 140-142)

In summary, each component of psychological capital relates to psychological theories. Solution-focused brief therapy (SFBT) is essential for hope by encouraging the student to initiate the study goals and find their way to success using the scaling questions technique. Moreover, it can increase the optimistic thought by using the activating event or situation, beliefs, consequences, and disputation (ABCDs) technique via rational emotive behavior therapy (REBT) after analyzing, managing an irrational thought, and flipping to positive thoughts, including using rational emotive imagery and reframing techniques. Furthermore, the ABCDs technique can also be applied to increase resilience in students by reframing positive self-talking techniques. For self-efficacy, Bandura's social learning theory is a behavior-based theory that uses modeling and verbal persuasion techniques to strengthen one's belief (Srisawat, 2015, pp. 142-143).

3.2 Psychological theories that related to self-compassion

(1) Compassion-focused therapy (CFT)

Compassion-focused therapy asserts motives and skills associated with biological factors, attachment styles, and affiliative behaviors. It impacts the self-regulation and well-being of humans with emotions, e.g., sadness, anger, anxiety, happiness, and so on. Moreover, there is a foundation of brain function as a neurophysiological model to reveal the three types of major emotions: (1) Threat- and self-protection-focused systems, which refer to defensive behaviors like fighting, submission, and freezing. (2) Drive, seeking, and acquisition-focused system is a driving system that focuses on searching and experiencing their brain to be more focused, achieve, and persuade, and (3) The contentment, soothing, and affiliative-focused system is a system to open for peacefulness that is an evolution system for humans in adjustment of the brain's function of attachment and affiliation.

An exercise technique that can be applied in this therapy is as follows:

(I) Technique developing the self-inner – this is a technique which is the same as the actor method in file. Counselee will slowly breathe and relax their face and posture to start focusing on expression and feelings of kindness as helpful and supportive behaviors.

(II) Technique self-flowing – this is a technique of freely accepting the surrounding kindness of the surroundings by imagining the giver's ideal behavior. (Gilbert, P., 2012. pp. 1-13)

(2) Mindfulness-based compassion therapy

Mindfulness-based compassion therapy consists of mindfulness-based stress reduction andmindfulness-based cognitive therapy theories as follow.

- Mindfulness-Based Stress Reduction (MBSR)

MBSR is a concept of mindfulness training to reduce stress, developed in 1979 by Jon Kabat-Zinn, a distinguished professor at the Medical School of the University of Massachusetts. MBSR focuses on living in the moment while simultaneously acknowledging the thoughts occurring within the mind. It can be reflecting on thoughts as a meta-reflection without attempting a judgment on themselves, but it is a learning process to discover the truth of mind by observing narratively, perspectives, and characteristics uniquely (Painuchit, 2561, pp. 76-77).

The MBSR program can be applied in group counseling, with consisting of not over 30 participants throughout 8 to 10 weeks in counseling program period. Each weekly session spends from 120 to 150 minutes. This is an example format of this theory for counseling:

(1) An introduction part to guide the mindfulness and meditation, including the first body observation.

(2) Practical exercises include sitting meditation focusing on individual's breath, mindful yoga, walking and standing meditation, and mindfulness during eating.

(3) Group conversations about the topics related to stress and self-adaptation.

(4) Summarizing each session of mindfulness counseling program, along with guidance for daily home-based mindfulness practice lasting at least 45 minutes every day. Each session, people are encouraged to observe their thoughts and emotions without into their deeply details of thought, but involves self-awareness via personal sensations, current thoughts, and emotions (Losatiankij, 2015, p. 52).

Moreover, there are researchers have applied the MBSR concept in groups counseling for psychological sensitivity in HSP, aged between 18 and 75 years and designed an 8-weeks mindfulness counseling program consisting of 150 minutes in total time per week. The program consisted of three stages including:

I. Body scan: Pay attention to focus on the overall parts in body observation and body sensation when experiencing psychological sensitivity.

II.Yoga exercises: Focusing on the muscular system of the body.

III.Sitting meditation: To observe a nervous system sensations, breathing, thoughts, and emotions in the current moment during meditation. Participants were required to receive an instructional video before meditation program in weeks 1, 3, and 5. The study observed that program participants were increased in the level of self-acceptance, emotional empathy, personal growth, self-transcendence, and significant reduced in stress and anxiety levels (Soons, Brouwers, & Tomic, 2010, pp. 148-163).

- Mindfulness-Based Cognitive Therapy (MBCT)

MBCT is also a mindfulness concept developed by psychologists, including Zindel Segal, Mark Williams, and John Teasdale. It combines the mindfulness training of MBSR with the Cognitive Behavioral Theory (CBT). The objective of MBCT theory is to retreat an experiencing depressive symptom from negative thought pattern. It emphasizes the way of people to detach themselves from thinking such as recognizing worded "thoughts of not myself" or "thoughts of thoughts

are just thoughts". Participants are encouraged to practice mindfulness independently for at least 45 minutes daily (Losatiankij, 2015, pp. 51-52).

There are studies have mentioned that counseling programs based on MBCT can increase self-acceptance and self-understanding, contributing to personal growth and improved well-being (Ritkumrop, 2020, pp. 1-4). Furthermore, MBCT has been implemented for people who have a Multiple Chemical Sensitivity (MCS), aged in between 18-65 years, involving 85 participants in an 8-week MBCT counseling program consisting of 150 minutes fer week, with self-practice at home for 45 minutes per day, six days a week. The results demonstrated that MBCT was associated with an increasing in the level of self-compassion, enhancing self-reflection, and a better perspective on coping with self-related stress.

Given the empirical evidence findings above, it is interesting to explore people with have a psychological sensitivity, who are at risk of developing negative self-concepts, anxiety, and depression due to an unfavorable or uncomfortable environment, can benefit from the self-awareness into their thoughts through MBCT and MBSR-based theories (Thammarongpreechachai, 2022, pp. 4-12). Additionally, research on undergraduate students in the late adolescent developmental stage revealed that self-compassion was positively moderated with the reduction rate of stress according to particularly concerning academic expectations, academic stress, and negative self-feelings. Self-compassion is the key factor for promoting a more reasonable in thinking process, especially in the context of guidance and counseling aimed at enhancing self-compassion (Lee et al., 2022, p. 3195) which is a positive psychological factor to encourage late adolescent, which is closely related to academic coping and emotional responses to the diverse experiences in an educational institution. Self-awareness allows students to be more resilient and more adaptive to deal with academic challenges and life experiences, potentially reducing the level of stress and depression, which can be related to psychological sensitivity when facing with undesired circumstances (Katesook, 2020, pp. 1-5) within the framework of mindfulness-based concepts, including MBSR and MBCT theories.

Psychological theories that related to self-compassion are compassion-focused therapy and mindfulness-based compassion therapy. These two theories are used in both individual and group counselling programs to help student about the attachment styles that link to depression by adjusting from insecure attachment which consists of anxiety and avoidance attachment to secure attachment, developing the propriate life in university, and focusing on the career decision after graduation (Popaibul, Pontanya, & Sakulsriprasert, 2022, pp. 36-38).

4.Definition and nature of population

4.1 Late adolescence

The term "Adolescence" originates from the Latin, and the word "Adolescence," refers to the period of physical, emotional, social, and intellectual development transitioning into adulthood (age of 12-25 years old). Adolescence represents a transformative phase, considered as a critical period, requiring the time for living adjustment in sometimes. These changes sometimes result in difficulty in adapting and pose personal issues or problems for adolescents.

Adolescence is divided into 3 substages in any type biologically with a slightly overlapping in time for development each substages, observable by various factors such as biological and physical appearances, social, cognitive development, genetics, and environmental influences. Adolescence can be summarized as follows:

1. Early Adolescence refers to adolescents between 13 and 15.

2. Middle Adolescence: This stage refers to adolescents between the ages range of 16 to 19.

3. Late Adolescence: This stage refers to adolescents between the ages range of 19 to 25.

These stages help us understand the distinct characteristics and developmental aspects associated with each stage of adolescence (Koolnaphadol, 2019, pp. 1-3).

4.2 Developmental and Social Psychological Concepts Relevant to Late Adolescents

The explored concepts and theories are identified significantly to understand the nature, development, and factors affecting a specific population group which is late adolescences. In this case, the study focused on undergraduate students from three universities in Bangkok, Thailand, in the faculty of education that is a collaborated member with The Council of University Presidents of Thailand in late adolescence's stage. The study aimed to establish a causal model for SPS in this population, considering a relationship with psychological capital and self-compassion. The related concepts and theories are as follows:

4.2.1 Maslow's hierarchy of needs

The variables examined in this study encompass both psychological capital (hope, self-efficacy, optimism, and resilience) and self-compassion (mindfulness, kindness, and humanity). These variables are positive psychological factors of people. The Maslow's Hierarchy of Needs is essential as a framework theory due to its role in developing positive mental characteristics and fulfilling complete humanity with life goals and aspirations. Maslow's Hierarchy of Needs consists of five levels of needs as show below:

2.1.1.1 Physiological Needs: This need is the most fundamental need firstly, related to physical well-being, such as food well consuming.

2.1.1.2 Safety Needs: Safety need is seeking security and stability in life, including job and financial stability.

2.1.1.3 Social Needs: Social need focuses on the importance of love, belonging, and deeply relationships with family, friends, or romantic partners.

2.1.1.4 Self-Esteem: This is the need for value from self-acceptance, a sense of accomplishment, and self-proud.

2.1.1.5 Self-Actualization: Self-actualization is the highest level of a personal's developmental needs, reflecting a desire to genuinely realize a full potential and abilities.

Maslow's Hierarchy of Needs was integrated into the study as it provides a comprehensive framework for understanding late adolescence who is an HSP' various needs and motivations. These needs shape their psychological well-being and influence their approach to life's challenges and opportunities during studying in university (Boonkerd, 2015, pp. 8-9).

4.2.2 Erikson's psychosocial theory

An Austrian psychoanalyst called "Erik Erikson", emphasized the importance of human development, highlighting the influence of environmental factors, such as society, culture, beliefs, values, customs, and attitudes, which are all people experiences that shape thinking patterns, emotions, and behaviors. Development involves the people's personality as an ego that can evolve through different stages of life. The development of ego can lead human in two dramatically different types which are positive (strong) and negative (weak). To identify ego, it related to other various ways as follow:

(1) Body Ego: This ego form relates to satisfaction of human in personal physical attributes. People can develop themselves through experience, self-perception, and attitude, playing a significant role in developing either a strong or weak ego in terms of body image.

(2) Identity Ego: Identity ego is one of ego's type that refer to the personality development from a daily life from related situation and experience in various rolled such as being a parent, a friend, a lover, or a colleague.

(3) Ideal Ego: The ideal ego is shaped by personal holistic self-concept, observable from thoughts and fantasy about the combined physical and identity egos. (Benjakan, 2021, pp. 18-20)

As mentioned above, it is essential to note that ego is changeable all the time, much like the human development phases through which people learn and adapt from their environments, also from biological factors, emotional development, social interaction, and intellectual factor. Therefore, in terms of the developmental perspective explained earlier, human development can be classified into eight stages:

Stage 1: Trust vs. Mistrust

This stage occurs in the ages 2 to 3 and be called as an infant. This stage is a crucial stage for the child's sense of autonomy and self-identity as developing of physical abilities, muscular control, physical movement, and the ability for self-control. Infant who successfully positive develop in this stage will feel independent and secure in their abilities with optimistic thinking as showing the comfortability with others. In contrast, those who struggle may feel mistrusted other people according to uninvolved parenting style and inappropriate teaching style.

Stage 2: Autonomy vs. Shame and Doubt

This stage occurs around the ages 2 to 3 and be called as an early childhood stage. This stage relates to autonomy sensation such as muscular control, physical movement, and the control of individual excretion system. Children who successfully develop in this stage will secure to be themself. In contrast, those who struggle may develop shame, doubt, and lack of confidence regarding to the slightly opportunity to explore the world throughout activities.

Stage 3: Initiative vs. Guilt

This stage is known as the middle childhood phase, typically occurring between the ages of 4 to 6 years. This period is very important for children to become more active in their lives, becoming more self-reliant as a profound impact on fostering creativity. Children start to develop learning skills, engage in cognitive processes, and exhibit a natural curiosity by exploring their interests by more extremely extracurricular activities. This is facilitated through the roles assigned to them by the people around them. However, parent should be comfortable to encourage the skill set of thinking and providing guidance for daily life. Children may need help to develop their thinking and fantasy imagination.

Stage 4: Industry vs. Inferiority

This is a state for children namely as late childhood, typically ranging from 7 to 12 years of age. As they are more socialize and engage with their peers in school. Late childhood tends to focus on activities they feel interested, emphasize during group activities as an importance of collaborating with classmates. Thus, it is

very essential to get support and encouragement from the people around them like parents, teachers, and friends in performing and participating in activities and providing constructive feedback in cultivating a sense of industriousness. In contrast, late childhood who do not feel confidence and lack of self-value, will turn to cultivate the sense of inferiority instead.

Stage 5: Ego-Identity vs. Role Confusion

This stage usually occurs during adolescence, ranging from 13 to 19 years of age, building on the developments of the previous stage. Adolescence explores their interests and demonstrate continuous effort during this period. They become more self-aware and develop a profound understanding of themselves. This developmental stage develops emotional, social, intellectual aspects, especially physical development. In the overall view in this stage, Adolescence identifies their strengths and interests, further shaped by their interactions with friends in the school. Adolescence wo have well-development will understand their roles, recognize their self-worth, and engage activities they feel interested. In contrast, those who do not experience the necessary growth from previous stages may struggle to find their self-identity and face role-confusion, leading to disruptive behaviors and challenges in various aspects, including social and sexual development critically.

Stage 6: Intimacy vs. Isolation

This developmental stage typically spans from 20 to 24 and represents a crucial phase of becoming a unique person. It is a stage marked by personal growth and the development of good relationship with others as they are comfortable with themselves, surrounded with people and can develop healthy relationships, People in this stage seek intimacy and are prepared to thrive as responsible, well-rounded adults. In the other hand, people who have not appropriately developed in earlier stages, they might experience isolation and struggle to find way, interacting with others.

Stage 7: Generativity vs. Stagnation

This stage is typically called “mature adulthood”. It often means people in the age of 65 and over. People experience, learn by themselves content, and proud of their accomplishments. They are driven by a sense of caring for others and reflecting on their life's impact, both on a personal and societal level. They actively care to others, especially younger generations. In contrast, those who have not fulfilled earlier in previous developmental stage may experience stagnation, retreating from social engagement, and failing to find happiness in their past. These people can be identified as someone who has a dissatisfaction and a lack of contentment, leading to detachment from society.

Stage 8: Ego Integrity vs. Despair

The people in this stage called older adulthood, starting in the age of 65 and over. This stage represents someone who has an extensive life experience, finding contentment and a sense of ego integrity. They feel proud of their life's journey and the wisdom they have gained. There is a strong sense of resolution, acceptance, and a positive perspective on the past. They have successfully navigated life's challenges and are at peace with themselves. In contrast, individuals with unresolved issues from earlier stages might feel despair, regrets, and dwelling on negative experiences, leading to hopelessness and dissatisfaction with life.

In summary, Erikson's theory relates to a personal development at each stage, influenced by their interactions with physical, emotional, social, and intellectual developments. People who have instilled attitudes, values, and beliefs will be developed from their experiences with society and culture. This is a critical foundation for life fulfillment, especially in adolescence stage that related to develop self-identity, influenced by people around them to encourage to become a completely development (Benjakan, 2021, pp. 23-30).

The researchers followed the concept of Maslow's hierarchy of needs and Erikson's psychosocial theory as they are particularly relevant to a sample group of undergraduate students aged 18-25. Maslow's third level of needs that relate with the need of love and relationships (Boonkerd, 2015, pp. 8-9), which is significant during the

developmental stage of forming intimacy (a positive development) and experiencing isolation (a negative development) in Erikson's theory (Benjakan, 2021, pp. 18-28). Furthermore, Erikson's theory that states that state positive psychological characteristics continually change due to life experiences and environmental factors related to self-perspective, self-concept, and personal identity. Conflicting perspectives and undesirable environments may lead to internal conflict and stress (Benjakan, 2021, pp. 24-28).

With above literature reviews, this study aims to develop a causal model of positive psychological factors which are Psycap and self-compassion, relating with SPS in late adolescents which is based on the idea of encouraging the population's self-understanding from physical, emotional, social, and intellectual developments within the framework of psychological and counseling theories to help them have a positive self-concept, purpose in life and the ability to develop themselves for future success after life in university (Benjakan, 2021, pp. 24-28).

CHAPTER 3
RESEARCH METHODOLOGY

There are four parts for research methodology as follows.

1. Population and sample
2. Research instrument
3. Data collection
4. Data analysis

1.Population and sample

Population

The population for this study consists of 4,588 undergraduate students from three universities in Bangkok, Thailand, in the faculty of education that is a collaborated member with The Council of University Presidents of Thailand.

Sample

The sample in this research are undergraduate students from three universities located in Bangkok, Thailand, in the faculty of education that is a collaborated member with The Council of University Presidents of Thailand in a total of 367 participants as expect, followed by the rule of thumb theory, as determined by the minimum sample from the ratio of one parameter: 10-20 participants (Schumacker & Lomax, 2010, p. 42). This research involves a total of 10 parameters and determines the minimum participants of 100 participants by simple random sampling, lastly derived 306 participants in total.

Sampling selection method

(1) The population was randomly sampled by dividing it into strata of population in each educational year (Kantasorn, Chulakadabba, & Punyapas, 2018, pp. 156-160).

(2) Simple Random Sampling was then applied in the method due to the findings insignificantly relationship in this population in different age, gender (Jagiellowicz, Aron, & Aron, 2016, p. 188), cumulative grade point in average,

geographic residence, and major of study (Chantarasena, 2012, p. 4). Therefore, simple random sampling was utilized to achieve this sample size proportionate and sufficient to represent the population (Ponce-Valencia et al., 2022, p. 2).

The following steps for sampling selection are manipulated in the number of samples increased by at least 5% to prevent data loss from research instruments. In this case, the sample size ideally was increased from 200 individuals to 250 individuals at least. In really, the minimum number of samples are 368 to sufficient for both descriptive data and causal model analysis.

2.Research instrument

This research instrument consists of are personal information and three psychological scales divided into four and were used in the Thai version; details are as follows.

Part.1 The Personal Information

The construction of the personal information in Part.1 for the sample group concluded gender (เพศสภาพ), เพศวิถี (sexuality), อายุ (age), ชั้นปี (year of study), required to fill in the blank, and สาขาวิชา(major) and มหาวิทยาลัย (university) that required to fill from the lists box.

Part.2 Psychological scales

I. The Highly Sensitive Person scale (HSP scale)

The HSP scale consists of 27 items, rephrased from the Thai version by Ussanarassamee (2022) that translated from the Highly Sensitive Person test, 27 items in English originally by Aron & Aron (1997). This HSP scale is evaluated for content validity before trying out with samples that are not the same as the real entire samples (Ongiem, 2018, p. 36) that are undergraduate students from three universities in Bangkok, Thailand, in the faculty of education that is a collaborated member with The Council of University Presidents of Thailand (Sukdee, 2015, p. 1421) for the tests of Power of discrimination and Reliability (α) , and be used with real samples after adjudgments of this scale.

The HSP Scale, Thai version, 27 items can be categorized as three factors: LST, EOE, and AS, and they have α values of 0.75, 0.67, and 0.81, respectively, including the overall α value of whole scale = 0.909. The scoring system for this scale is a rating scale with 5-level which are not at all, not much, somewhat, very much, exactly (Benham, 2006, pp. 1433-1440)

Table 1 The criteria for scoring the HSP scale, Thai version

Choices	Scores (In the total of 5 point) (Positively question)
ไม่ตรงกับตัวฉันอย่างยิ่ง (Not at all)	1
ไม่ตรงกับตัวฉัน (Not much)	2
ทั้งตรงและไม่ตรงพอ ๆ กัน (Somewhat)	3
ตรงกับตัวฉัน (Very much)	4
ตรงกับตัวฉันอย่างยิ่ง (Exactly)	5

Additionally, the scores collected from the HSP scale were calculated into a total score and then scaled to a maximum of 5 points. This overall score was further categorized into two levels to assess the level of SPS, as follows:

Non-Sensitive Person (Non-HSP)Percentile rank between 0.00 – 3.29

Highly Sensitive Person (HSP)Percentile rank between 3.30 – 100.00

Table 2 The example of questions in the HSP scale, Thai version

ข้อที่	คำถาม	ไม่ตรงกับตัวฉันอย่างยิ่ง (1)	ไม่ตรงกับตัวฉัน (2)	ค่อนข้างไม่ตรงกับตัวฉัน (3)	ทั้งตรงและไม่ตรงพอ ๆ กัน (4)	ค่อนข้างตรงกับตัวฉัน (5)	ตรงกับตัวฉัน (6)	ตรงกับตัวฉันอย่างยิ่ง (7)
X	เมื่อต้องรับสัมผัสที่แรง ๆ (เช่น อากาศที่เย็นหรือร้อนเกินไป เสียงดัง แสงจ้า กลิ่นแรง เป็นต้น) คุณจะรู้สึกอึดอัดได้ง่าย							
XX	เมื่อคนอื่นๆ ต้องอยู่ในสถานที่ที่ทำให้พวกเขารู้สึกไม่สะดวกสบาย คุณมักจะรู้ว่าต้องทำอะไรเพื่อให้พวกเขารู้สึกสบายขึ้นได้ (เช่น ปรับแสงหรือย้ายที่นั่ง)							
XXX	คุณให้ความสำคัญอย่างสูงกับการวางแผนชีวิตเพื่อหลีกเลี่ยงสถานการณ์ที่จะทำให้คุณรู้สึกไม่ดีหรือรู้สึกอึดอัดอย่างยิ่ง							

(Ussanarassamee, 2022a, pp. 1-10)

II. The Psychological Capital (Psycap) scale (Srisawat, 2015)

The Psycap scale consists of 28 items, rephrased from the Thai version by Srisawat (2015). This Psycap scale consists of four factors: Hope, Self-efficacy, Optimism, and Resilience, and they have the overall α value of whole scale = 0.85). The scoring system for this scale is a rating scale with 5-level which are totally not true, not true, not sure, true, and totally true.

Table 3 The criteria for scoring the psychological capital scale, Thai version

Choices	Scores (In the total of 5 point)	
	(Positively question)	(Positively question)
ไม่จริงที่สุด (Totally not true)	1	5
ไม่จริง (Not true)	2	4
ไม่แน่ใจ (Not sure)	3	3
เป็นจริง (True)	4	2
จริงที่สุด (Totally true)	5	1

Additionally, the scores collected from the Psycap scale were calculated into a total score and then scaled to a maximum of 5 points. This overall score was further categorized into five level, as follows:

Very low level of Psycap Score 1.00 - 1.50
Low level of Psycap Score 1.51 - 2.50
Average level of Psycap Score 2.51 - 3.50
High level of Psycap Score 3.51 - 4.50
Very high level of Psycap Score 4.51 - 5.00

Table 4 The example of questions in the Psycap scale, Thai version

ข้อที่	คำถาม	ไม่จริงที่สุด	ไม่จริง	ไม่แน่ใจ	เป็นจริง	จริงที่สุด
X	เมื่อเกิดสิ่งเลวร้ายกับฉัน ฉันคิดว่ามันจะผ่านพ้นไปได้					
XX	ฉันกังวลเมื่อถูกครูตำหนิเรื่องการเรียน					
XXX	แม้ว่าปัญหาทางการเรียนจะหนัก แต่ฉันก็คิดว่าจะผ่านพ้นไปได้					

(Srisawat, 2015, p. 131-146)

III. The self-compassion, Thai version

The self-compassion scale has 13 items, rephrased from Chompookard (2017), and consists of three factors: mindfulness, self-kindness, common humanity.

This scale has a rating scale with 5-level which are hardly ever, rarely, sometimes, often, and very often, and has an overall α value of whole scale = 0.88 (Chompookard, 2017, pp. 1-14).

Table 5 The criteria for scoring the self-compassion, Thai version

Choices	Scores (In the total of 5 point)	
	(Positively question)	(Positively question)
แทบจะไม่เคย (Hardly ever)	1	5
นาน ๆ ครั้ง (Rarely)	2	4
ครั้งคราว (Sometimes)	3	3
บ่อยครั้ง (Often)	4	2
บ่อยมาก (Very often)	5	1

(Chompookard, 2017, p. 1-14)

After that, the scores collected from the self-compassion scale were calculated into a total score and then scaled to a maximum of 5 points. This overall score was further categorized into three levels, as follows:

Low level of self-compassion Score 1.00 - 2.33

Average level of self-compassion Score 2.34 - 3.66

High level of self-compassion Score ระหว่าง 3.67 - 5.00

Table 6 The example of questions in the self-compassion, Thai version

ข้อที่	คำถาม	แทบจะไม่เคย (1)	นาน ๆ ครั้ง (2)	ครั้งคราว (3)	บ่อยครั้ง (4)	บ่อยมาก (5)
X	ฉันรับไม่ได้และตำหนิข้อบกพร่องของตนเอง					
XX	เมื่อฉันรู้สึกบกพร่องในเรื่องใดเรื่องหนึ่ง ฉันพยายามเตือนตนเองว่าคนส่วนใหญ่ก็เป็นเช่นเดียวกัน					
XXX	เมื่อใดก็ตามที่ฉันต้องดิ้นรนต่อสู้กับความยากลำบาก ฉันมักรู้สึกว่าคนอื่นคงไม่ลำบากเช่นฉัน					
XXXX	เมื่อไหร่ก็ตามที่ฉันรู้สึกหดหู่ท้อแท้ ฉันจะพยายามทำความเข้าใจความรู้สึกของตนเองด้วยใจเปิดกว้าง					

(Chompookard, 2017, p. 1-14)

Steps to Create Research instrument

1. Characterize variables in research by literature reviews and define the operational definitions

2. Documents and research studies relevant to SPS, psychological capital, and self-compassion were studied and employed as the research conceptual framework.

3. Research the instrument that can be used for this study and make an official letter to the research

4. Paraphrase and construct research instruments, followed by operational definitions, which consist of personal information consisting of duo-trio choices and a short answer question, seven questions in total, and three psychological scales consisting of the highly sensitive person, psychological capital, and self-compassion scales in five-rating scales with 106 items in total as submitted to research advisor to examine appropriateness.

Part.1: Personal Information consists of duo-trio choices and a short answer question, seven questions in total

Part. 2: Psychological scales consist of HSP, Psycap, and Self-compassion scales in five-rating scales each.

5. Three experts verify the quality of the research instrument and estimate the face validity (content, operational definitions, and statement) for these research instruments by three professionals with comments and scores for consideration, followed by criteria scores as +1 for the item that can be related to operational definitions, 0 for the item that might be related to operational definitions, and -1 for the item that cannot be related to operational definitions.

Table 7 The criteria score for the face validity by professionals

Score	Description
+1	The item can be related to operational definitions.
0	The item might be related to operational definitions.
-1	The item cannot be related to operational definitions.

6. Collect all expert scores to calculate the Index of item-objective Congruence: IOC in each item, including adjusting the item's content, operational definitions, and statement. Research instrument items were improved to be more appropriate as advised by the experts, and the remaining 68 items were selected as questions ranging from 0.20 and above in a discrimination power range.

7. Try out the research instruments with 35 undergraduate students from a university located in Bangkok, Thailand, in the faculty of education that is a collaborated member with The Council of University Presidents of Thailand, not the sample group

8. Analyze the discrimination and reliability of research instruments

9. Prepare these research instruments for sample groups from three universities: undergraduate students and undergraduate students in the Faculty of Education from three universities in Bangkok, Thailand, who collaborated with members of the Council of University Presidents of Thailand.

10. Collect only completely answered research instruments set for basic statistical data as narrative information and causal analysis, contribute as a structural equation model to explore the causal relationship of positive psychological factors and sensory processing sensitivity in samples.

3.Data Collection

To collect data, these are provided steps to follow:

(1) To measure students' psychological capital, The researcher contacted developers to request permission to use instruments, including the Thai version of the HSP, Psycap, and self-compassion scales.

(2) The researcher conducted human research ethics approval through the e-ethics system of the Human Research Ethics Committee of Srinakharinwirot University (Human Research Ethics Committee, 2021). (Human Research Ethics Committee, 2021)

(3) The researcher submitted a formal request to the Graduate School of Srinakharinwirot University addressed to the University President to obtain permission for data collection from undergraduate students.

(4) Data collection involved distributing personal questionnaires and three positive psychological scales, accompanied by informed consent forms specifying the research objectives, procedures, anticipated benefits, and data privacy rights. Data collection took place over two months, from August to October 2 0 2 3 , followed by scoring according to the research instrument's criteria.

(5) The data obtained from the research, which was scored using research instruments, will be subjected to data analysis using statistical software. (Srisawat, 2015, pp. 131-146)

4.Data analysis

Analyze two collected data from study by following steps.

4.1 Data for research instruments

Firstly, research instruments which are a personal scale and three positive psychological scales, were used for the sample group (which is not the actual research sample group). The data was obtained as the percentage value, total scores, mean scores, and standard deviations using the SPSS Version 29.0.1.0 program for experimental purposes (Try Out).

4.2 Descriptive Data Analysis

The descriptive data is aimed to study the relationship between psychological factors and SPS in HS- and non-HS undergraduate students by collecting 306 raw data and determining two different sorts of undergraduate students (HS- and non-HS).

Afterward, two sorts of data are calculated as maximum, minimum, and average scores, standard deviation (S.D.), including normal distribution test by The Statistic Package for the Social Science or SPSS Version 29.0.1.0 program for the two-sample t-test analysis. (Ucharattana, Sukkapatthanasrikul, & Maipimai, 2015) (Xu et al., 2017)

4.3 The causal model analysis

Analyze the correlation coefficient by the Pearson-Product Moment Correlation Coefficient.

Analyze the causal model by path analysis for the relationship between SPS and positive psychological factors by using the program Lisrel 12.4.3.0 (Srisawat, 2015, p. 135) by using criterion from Angsuchoti, Wijitwanna, & Pinyopanuwat (2011, pp. 24-30) and investigate the consistency of the model.

4.4 Statistics for analysis

Basis statistics

- Mean
- Standard Deviation
- Coefficient of Variation
- Skewness
- Kurtosis

Statistics for research instruments quality

- The Index of item-Objective Congruence: IOC
- Discrimination
- Reliability

Statistical hypothesis testing

Path analysis by Structural Equation Model (SEM)

- Pearson-Product Moment Correlation Coefficient
- Squared Multiple Correlation
- Degree of Freedom
- Multiple Linear Regression (MLR) Model & Evaluation by t-test
- Path coefficient
- Effect coefficient

Table 8 the criteria for the goodness-of-fit measures of the causal model via

Index	Value
χ^2	Significant in χ^2 or p-value > 0.5
χ^2/df	< 2.00 = Good consistency 2.00-5.00 = Fair consistency
GFI	> 0.95 = Good consistency 0.90-0.95 = Fair consistency
AGFI	> 0.95 = Good consistency 0.90-0.95 = Fair consistency
CFI	> 0.95 = Good consistency 0.90-0.95 = Fair consistency
SRMR	< 0.50 = Good consistency
RMSEA	< 0.05 = Good consistency 0.05-0.08 = Fair consistency 0.08-0.10 = Not so good consistency > 0.10 = Poor consistency

(Angsuchoti et al., 2011, pp. 29-30)

CHAPTER 4
RESULT

The following symbols are represented as variables and statistical values to present these results.

Table 9 Symbols for variables

Symbols	Definition
SPS	Score of the Sensory Processing Sensitivity
LST	Score of low sensory threshold
AES	Score of aesthetic sensitivity
EOE	Score of ease of excitation
Psycap	Score of the psychological capital scale
HOP	Score of hope
EFF	Score of self-efficacy
OPT	Score of optimism
RES	Score of resilience
SCompass	Score of the self-compassion scale
MIN	Score of mindfulness
KIN	Score of self-kindness
HUN	Score of common humanity

Table 10 Symbols for statistical values

Symbols	Definition
k	Total item
M	Average score
SD	Standard Deviation
Sk	Skewness
Ku	Kurtosis
Max	Maximum value
Min	Minimum value
r	Pearson Product Moment Correlation Coefficient
R^2	Squared Multiple Correlation
df	Degree of Freedom
χ^2	Chi-Square
P	Probability Level
GFI	Goodness of Fix Index
SRMR	Standardized Root Mean Square Residual
RMSEA	Root Mean Square Error of Approximation
DE	Direct Effect
IE	Indirect Effect
TE	Total Effect
*	.05
**	.01
***	.001

Results from statistical analysis

The results can be illustrated in two parts, followed by objectives which consist of comparing the level of sensory processing sensitivity between two different groups of late adolescents which are a highly sensitive person and a non-highly sensitive person, and exploring the causal models of positive psychological factors and sensory processing sensitivity in late adolescence.

1. The level of sensory processing sensitivity between two different groups of late adolescences

The 306 research instruments that can be analyzed for narrative information can be used as empirical data to explore the samples as follows.

The samples can be grouped by gender as male and female and have quantities of 117 and 189. In contrast, the samples grouped by sexuality are male, female, and LGBTQ, with quantities of 84, 180, and 42, respectively. Dividing the sample group into four levels of study years, which are year 1, year 2, year 3, and year 4, the sample group has a quantity of 185, 55, 63, and 3, respectively. The samples consist of four age groups, which are 18, 19, 20, 21, and 22, with 100, 105, 57, 35, and 7, respectively.

All 27 items of the highly sensitive person scale will be used to calculate the level of sensory processing sensitivity, including the level of psychological factors, via two research instruments, which are 28 items of the psychological Capital and 13 items of the self-compassion scale. In conclusion, 68 items as a research instrument can be used for this study.

Table 11 Result of Univariate Summary Statistics for Continuous Variables (n=306)

Variable	k	M	SD	Max	Min	Sk	Ku	Interpreting
1. SPS	27	3.447	0.502	5.000	1.407	-0.323	1.068	Highly Sensitive
1.1 LST	7	3.176	0.675	5.000	1.000	-0.271	0.316	Highly sensitive
1.2 EOE	13	3.456	0.599	5.000	1.385	-0.238	0.561	Highly Sensitive
1.3 AS	7	3.702	0.528	5.000	1.000	-0.426	1.688	Highly Sensitive
2. Psycap	28	3.972	0.490	5.000	2.214	-0.339	0.545	High level
2.1 HOP	9	4.025	0.531	5.000	1.444	-0.549	1.567	High level
2.2 EFF	9	3.934	0.636	5.000	1.200	-0.585	1.206	High level
2.3 OPT	5	4.018	0.550	5.000	1.778	-0.558	0.403	High level
2.4 RES	5	3.830	0.604	5.000	1.800	-0.114	-0.038	High level
3. Self-Compassion	13	3.207	0.621	4.923	1.308	0.015	-0.078	Average level
3.1 MIN	4	3.624	0.595	5.000	1.750	-0.141	-0.074	Average level
3.2 KIN	4	3.117	0.809	5.000	1.000	0.126	-0.384	Average level
3.3 HUM	5	2.901	0.790	5.000	1.000	0.102	-0.168	Average level

Table 11 shows the result of univariate summary Statistics for Continuous Variables. It found that overall, the samples are highly sensitive, showing a high level of sensitivity in its factors, which are LST, EOE, and AS, with average scores of 3.176, 3.456, and 4.702, respectively. It also shows the average score of the other two positive psychological factors, which are Psycap and self-compassion, as the average score of Psycap is the high-level score, including the high level in factors' average scores, which

are HOP, EFF, OPT, and RES with scores of 4.025, 3.934, 4.018, and 3.830, respectively. In contrast, the samples have the average level in self-compassion average score, which consists of three factors MI: N, KIN, and HUM, and the average scores are 3.624, 3.117, and 2.901, respectively, as indicated as an average level in the scoring system.

Sample group will be comparing the level of sensory processing sensitivity between two different groups of late adolescents which are a highly sensitive person and a non-highly sensitive person by percentile as following table

Table 12 The level of SPS score of samples by percentile

Score	Percentile	Z-score	T-score	Score	Percentile	Z-score	T-score
1.407	.3	-4.064	9.36	3.444	-0.006	49.94	3.444
1.815	.7	-3.251	17.49	3.481	0.067	50.67	3.481
2.000	1.0	-2.882	21.18	3.519	0.143	51.43	3.519
2.111	1.3	-2.661	23.39	3.556	0.217	52.17	3.556
2.296	1.6	-2.293	27.07	3.593	0.291	52.91	3.593
2.333	2.0	-2.219	27.81	3.630	0.364	53.64	3.630
2.370	2.3	-2.146	28.55	3.667	0.438	54.38	3.667
2.444	2.6	-1.998	30.02	3.704	0.512	55.12	3.704
2.481	3.3	-1.924	30.76	3.741	0.585	55.85	3.741
2.519	3.6	-1.849	31.51	3.778	0.659	56.59	3.778
2.556	4.2	-1.775	32.25	3.815	0.733	57.33	3.815
2.593	4.9	-1.701	32.99	3.852	0.806	58.06	3.852

Table 12 (Continue)

Score	Percentile	Z-score	T-score	Score	Percentile	Z-score	T-score
2.630	6.9	-1.628	33.72	3.889	0.880	58.80	3.889
2.667	7.2	-1.554	34.46	3.926	0.954	59.54	3.926
2.704	8.5	-1.480	35.20	3.963	1.028	60.28	3.963
2.741	9.8	-1.407	35.93	4.000	1.101	61.01	4.000
2.778	10.1	-1.333	36.67	4.037	1.175	61.75	4.037
2.815	10.8	-1.259	37.41	4.074	1.249	62.49	4.074
2.852	12.1	-1.185	38.15	4.111	1.322	63.22	4.111
2.889	13.4	-1.112	38.88	4.148	1.396	63.96	4.148
2.926	14.7	-1.038	39.62	4.185	1.470	64.70	4.185
2.963	15.4	-0.964	40.36	4.222	1.543	65.43	4.222
3.000	17.3	-0.891	41.09	4.259	1.617	66.17	4.259
3.037	20.3	-0.817	41.83	4.296	1.691	66.91	4.296
3.074	21.9	-0.743	42.57	4.333	1.765	67.65	4.333
3.111	24.5	-0.670	43.30	4.370	1.838	68.38	4.370
3.148	27.1	-0.596	44.04	4.407	1.912	69.12	4.407
3.185	29.1	-0.522	44.78	4.481	2.059	70.59	4.481
3.222	30.7	-0.448	45.52	4.519	2.135	71.35	4.519
3.259	33.0	-0.375	46.25	4.556	2.209	72.09	4.556
3.296	34.0	-0.301	46.99	4.593	2.282	72.82	4.593
3.333	37.6	-0.227	47.73	4.704	2.504	75.04	4.704
3.370	38.9	-0.154	48.46	4.741	2.577	75.77	4.741
3.407	43.8	-0.080	49.20	5.000	3.093	80.93	5.000

Table 12 shows the sensory processing sensitivity level by ranking the percentile of 306 late adolescents referred to as highly sensitive persons, a percentile of 3.30-100.00. It can be assumed that most late adolescents as a sample group are highly sensitive person

In grouping based on the SPS, the samples as Non-HSP and HSP have quantities of 10 and 296. Moreover, the samples grouped by gender are male and female, totaling 117 and 189. In contrast, the samples grouped by sexuality are male, female, and LGBTQ, with quantities of 84, 180, and 42, respectively. Dividing the sample group into four levels of study years, which are year 1, year 2, year 3, and year 4, the sample group

Table 13 Multiple correlations between for observable and latent variables

		SPS	LST	AS	EOE	Psycap	HOP	OPT	EFF	RES	SCompass	KIN	HUM	MIN
SPS	Pearson Correlation	1	.842**	.636**	.928**	.032	.050	.083	-.021	-.049	-.400**	-.145**	-.396**	-.406**
	Sig. (2-tailed)		<.001	<.001	<.001	.579	.379	.146	.709	.398	<.001	<.001	<.001	<.001
	N	306	306	306	306	306	306	306	306	306	306	306	306	306
LST	Pearson Correlation	.842*	1	.359**	.689**	-.051	-.008	-.032	-.064	-.097	-.320**	-.110	-.312**	-.336**
	Sig. (2-tailed)	<.001		<.001	<.001	.376	.891	.572	.262	.089	<.001	.055	<.001	<.001
	N	306	306	306	306	306	306	306	306	306	306	306	306	306
AS	Pearson Correlation	.636**	.359**	1	.416**	.221**	.179**	.256**	.125*	.169**	-.035	.092	-.068	-.073
	Sig. (2-tailed)	<.001	<.001		<.001	<.001	.002	.029	.029	.003	.540	.107	.238	.202
	N	306	306	306	306	306	306	306	306	306	306	306	306	306
EOE	Pearson Correlation	.928**	.689**	.416**	1	-.018	.008	.043	-.058	-.106	-.485**	-.229**	-.467**	-.468**
	Sig. (2-tailed)	<.001	<.001	<.001		.748	.894	.451	.315	.065	<.001	<.001	<.001	<.001
	N	306	306	306	306	306	306	306	306	306	306	306	306	306
Psycap	Pearson Correlation	.032	-.051	.221**	-.018	1	.877**	.903**	.838**	.795**	.348**	.435**	.271**	.215**
	Sig. (2-tailed)	.579	.376	<.001	.748		<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001
	N	306	306	306	306	306	306	306	306	306	306	306	306	306
HOP	Pearson Correlation	.050	-.008	.179**	.008	.877**	1	.688**	.655**	.584**	.237**	.324**	.167**	.149**
	Sig. (2-tailed)	.379	.891	.002	.894	<.001		<.001	<.001	<.001	<.001	<.001	<.001	<.001
	N	306	306	306	306	306	306	306	306	306	306	306	306	306
OPT	Pearson Correlation	.083	-.032	.256**	.043	.903**	.688**	1	.688**	.650**	.278**	.364**	.223**	.150**
	Sig. (2-tailed)	.146	.572	.029	.451	<.001	<.001		<.001	<.001	<.001	<.001	<.001	<.001
	N	306	306	306	306	306	306	306	306	306	306	306	306	306
EFF	Pearson Correlation	-.021	-.064	.125*	-.058	.838**	.655**	.688**	1	.592**	.343**	.433**	.241**	.243**
	Sig. (2-tailed)	.709	.262	.029	.315	<.001	<.001	<.001		<.001	<.001	<.001	<.001	<.001
	N	306	306	306	306	306	306	306	306	306	306	306	306	306
RES	Pearson Correlation	-.049	-.097	.169**	-.106	.795**	.584**	.650**	.592**	1	.388**	.411**	.346**	.239**
	Sig. (2-tailed)	.398	.089	.003	.065	<.001	<.001	<.001	<.001		<.001	<.001	<.001	<.001
	N	306	306	306	306	306	306	306	306	306	306	306	306	306
SCompass	Pearson Correlation	-.400**	-.320**	-.035	-.485**	.348**	.237**	.278**	.343**	.388**	1	.731**	.908**	.842**
	Sig. (2-tailed)	<.001	<.001	.540	<.001	<.001	<.001	<.001	<.001	<.001		<.001	<.001	<.001
	N	306	306	306	306	306	306	306	306	306	306	306	306	306

Table 13 (Continue)

		SPS	LST	AS	EOE	Psycap	HOP	OPT	EFF	RES	SCompass	KIN	HUM	MIN
KIN	Pearson Correlation	-.145**	-.110	.092	-.229**	.435**	.324**	.364**	.433**	.411**	.731**	1	.530**	.438**
	Sig. (2-tailed)	<.001	.055	.107	<.001	<.001	<.001	<.001	<.001	<.001	<.001		<.001	<.001
	N	306	306	306	306	306	306	306	306	306	306	306	306	306
HUM	Pearson Correlation	-.396**	-.312**	-.068	-.467**	.271**	.167**	.223**	.241**	.346**	.908**	.530**	1	.643**
	Sig. (2-tailed)	<.001	<.001	.238	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001		<.001
	N	306	306	306	306	306	306	306	306	306	306	306	306	306
MIN	Pearson Correlation	-.406**	-.336**	-.073	-.468**	.215**	.149**	.150**	.243**	.239**	.842**	.438**	.643**	1
	Sig. (2-tailed)	<.001	<.001	.202	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	
	N	306	306	306	306	306	306	306	306	306	306	306	306	306

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

Table 13 show the correlations relationship between for observable and latent variables as founded the results as follow.

Sensory Processing Sensitivity as named “SPS” has a highly significance with its factors which are Low Sensory Threshold (LST), Aesthetic Sensitivity (AS), and Ease of Excitation (EOE) about 0.842, 0.636, and 0.928, respectively (significance at the 0.01 level). Within the factors of SPS, factors also correlate with each other, whether LST is highly significance with AS and EOE about 0.359 and 0.689, including the correlation between AS and EOE with highly significance about 0.416 (significance at the 0.01 level).

Psychological Capital (Psycap) also has a highly significance with its factors which are Hope, Optimistic (Opt), Efficacy, and Resilience (Res) about 0.877, 0.903, 0.838, and 0.795, respectively (significance at the 0.01 level). Within the factors of Psycap, factors also correlate with each other, whether Hope is highly significance with Optimistic, Efficacy, and Resilience about 0.688, 0.655 and 0.584, respectively. To follow by the correlation with Optimistic, also correlate with Efficacy and Resilience 0.688 and 0.658, respectively (significance at the 0.01 level). Including the correlated relationship between with a significance at the 0.01 level between Efficacy and Resilience about 0.592.

Self-compassion (SCompass) also has a highly significance with its factors which are Kindness (Kin), Common humanity (Hum), and Mindfulness (Min) about 0.731, 0.908, and 0.842, respectively (significance at the 0.01 level). Within the factors of Self-compassion, factors also correlate with each other, whether Kin is highly significance with Hum and Min about 0.530 and 0.438, respectively. Including the correlated relationship between with a significance at the 0.01 level between Hum and Min about 0.642.

With the correlation between latent variables, SPS only correlates inversely with SCompass about -0.400 (significance at the 0.01 level)

2.The causal models of positive psychological factors and sensory processing sensitivity in late adolescence

The causal analysis by The Structural Equation Model (SEM) of Positive Psychological Factors and Sensory Processing Sensitivity aims to investigate the Pearson correlation coefficient of the model variables as the multiple regression coefficients in the following table.

Table 14 The analysis of the multiple regression *co-*

Variables	SPS	LST	AS	EOE	Psycap	HOP	OPT	EFF	RES	SCompass	KIN	HUM	MIN
SPS	0.252												
LST	0.285	0.456											
AS	0.169	0.128	0.278										
EOE	0.279	0.279	0.131	0.359									
Psycap	0.008	-0.017	0.057	-0.005	0.240								
HOP	0.013	-0.003	0.050	0.002	0.228	0.281							
OPT	0.023	-0.012	0.074	0.014	0.243	0.201	0.302						
EFF	-0.007	-0.028	0.042	-0.022	0.261	0.221	0.241	0.405					
RES	-0.015	-0.040	0.054	-0.038	0.236	0.187	0.216	0.228	0.365				
SCompass	-0.125	-0.134	-0.012	-0.180	0.106	0.078	0.095	0.136	0.146	0.386			
KIN	-0.043	-0.044	0.029	-0.082	0.127	0.102	0.119	0.164	0.148	0.270	0.354		
HUM	-0.161	-0.171	-0.029	-0.226	0.107	0.071	0.099	0.124	0.169	0.456	0.255	0.654	
MIN	-0.161	-0.179	-0.031	-0.221	0.083	0.062	0.065	0.122	0.114	0.413	0.206	0.410	0.624

Table 14 show the analysis of multiple regression coefficients as a covariance matrix. It is found that the highest score with regression is an internal factor relationship between Common Humanity and Self-compassion (Hum and SCompass), with a score of 0.456, followed by Kindness and Common Humanity (KIN and HUM) and Low Sensory Threshold and Sensory Processing Sensitivity (LST and SPS) with scores of 0.410 and 0.285, respectively.

It also found that the highest score with regression in the relationship between internal and external factors is Resilience and Common humanity (RES and HUM), with a score of 0.169, followed by Kindness and Self-efficacy (KIN and EFF) and Resilience and Kindness (RES and KIN) with scores of 0.164 and 0.148, respectively.

3.The result for the goodness-of-fit measures by SEM

Table 15 The result for the goodness-of-fit measures

Statistical data	Value	Criteria interpreting	Interpretation
χ^2	48.49 (p-value=0.00059)	No significance (p<.05)	-
df	21	-	-
χ^2/ df	2.3090	< 2.00 = Good consistency 2.00-5.00 = Fair consistency	Pass the criteria
GFI	0.973	> 0.95 = Good consistency 0.90-0.95 = Fair consistency	Pass the criteria
AGFI	0.929	> 0.95 = Good consistency 0.90-0.95 = Fair consistency	Pass the criteria
CFI	0.980	> 0.95 = Good consistency 0.90-0.95 = Fair consistency	Pass the criteria
SRMR	0.0694	< 0.08 = Good consistency (Angsuchoti, Wijitwanna, & Pinyopanuwat, 20111, as cited in Hu & Bentler, 1999, p. 6)	Pass the criteria
RMSEA	0.0655	< 0.05 = Good consistency 0.05-0.08 = Fair consistency 0.08-0.10 = Not so good consistency > 0.10 = Poor consistency	Pass the criteria

Table 15 show the resulted scores by the goodness of fit measures which are χ^2/ df, GFI, AGFI, CFI, SRMR, RMSEA, and Squared Multiple Correlation with scores of 2.3090, 0.973, 0.929, 0.980, 0.0694, 0.0655, and 0.372, and they are interpreted as passing the criteria.

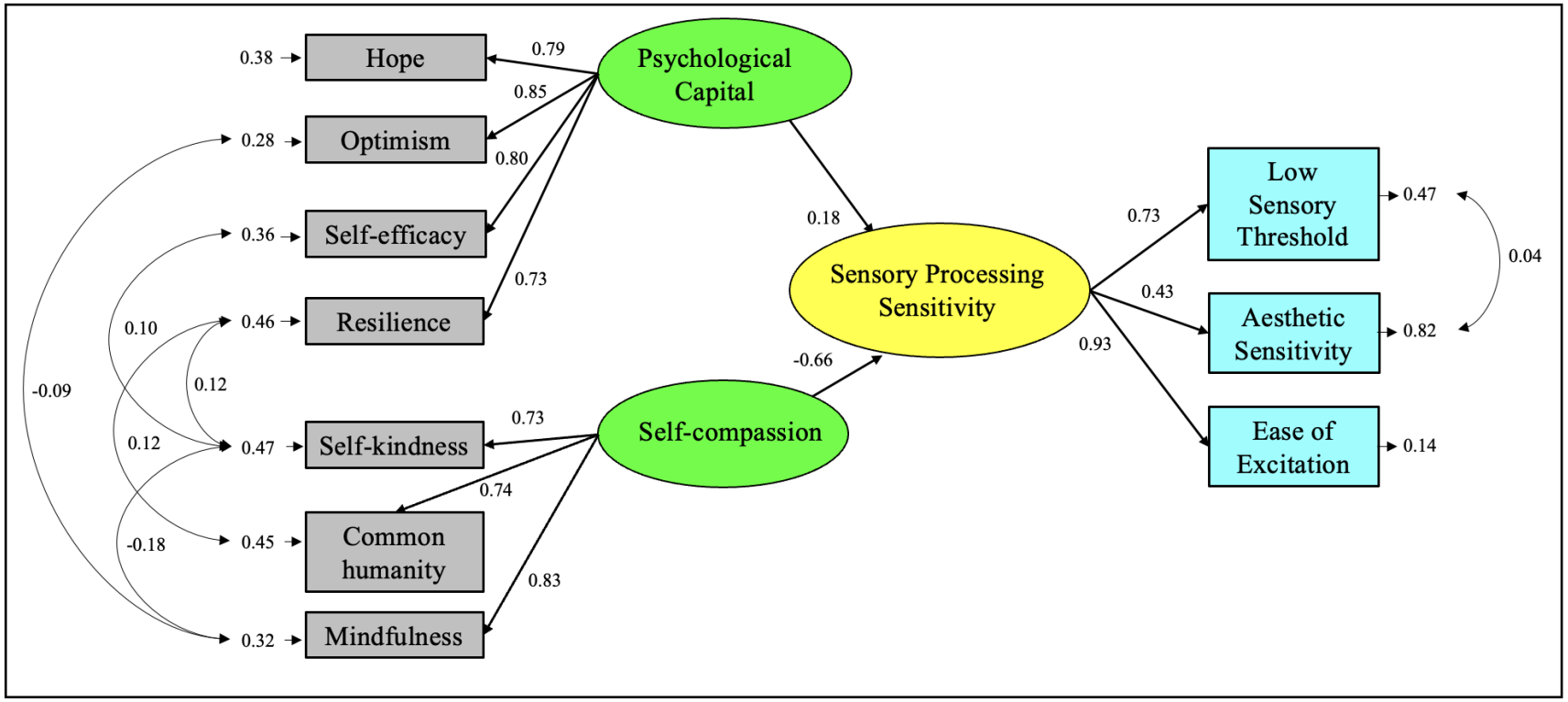

Figure 2 Causal analysis by SEM model of SPS and positive psychological factors of late adolescence.

Figure 2 show the related trains of SPS and Psychological Capital (Psycap) and Self-compassion (SCompass) and their factors as summarized below.

The results showed a positive relationship between Psycap and its factors: optimism, self-efficacy, hope, and resilience, about 0.85, 0.80, 0.79, and 0.73, respectively. Moreover, there is a positive relationship between SCompass and its factors, which are mindfulness, common humanity, and self-kindness, about 0.83, 0.74, and 0.73, respectively. There is also a positive relationship between SPS and its factors: ease of excitation, low sensory threshold, and aesthetic sensitivity of about 0.93, 0.73, and 0.43, respectively.

Table 16 The statistical data for direct effect, indirect effect, and total effect of the model variables

Variable	Sensory Processing Sensitivity (SPS)			R^2
	DE	IE	TE	
Psychological Capital	0.18	-	0.18	0.372
Self-compassion	-0.66	-	-0.66	

Table 16 show an influence line describing the significant relationship between SPS and Psycap with a total effect score of about 0.18 and a significant relationship between SPS and self-compassion with a total effect score of about -0.66. In conclusion, the results from the SEM model shown in Table 4 and Table 5 for this study have a Squared Multiple Correlation (R^2) value of 0.372, which all variables can describe as a variation of about 37.20% in its model. Psychological Capital has a positive significance with SPS, but Self-compassion has a negative

CHAPTER 5
SUMMARY DISCUSSION AND SUGGESTION

Aims, hypothesis, and research methodology

This study aims to develop the causal model of Sensory Processing Sensitivity (SPS) with positive psychological factors which are psychological capital and self-compassion in the samples group of undergraduate students from three universities in Bangkok, Thailand, in the faculty of education that is a collaborated member with The Council of University Presidents of Thailand by using research instrument which consists of personal information part and part of positive psychological scale part (The HSP in 27 items, Psycap in 28 items, and self-compassion in 13 items scales) with the reliability of 0.925, 0.909, and 0.852, respectively.

1.Summary of the results

This collection of 306 set of the scales were used in the SPSS and Lisrel programs version 12.4.3.0 for the values of Mean (M), Maximum (Max), and Minimum (Min) scores, Standard Deviation (S.D.), Skewness (Ske), Kurtosis (Kur), Pearson Product Moment Correlation Coefficient (r), Squared Multiple Correlation (R^2), Degree of Freedom (df), Chi-Square (χ^2), Probability Level (P), Goodness of Fix Index (GFI), Standardized Root Mean Square Residual (SRMR), Root Mean Square Error of Approximation (RMSEA), Direct Effect (DE), Indirect Effect (IE), and Total Effect (TE).

1.1 The difference between HS- and Non-HS undergraduate students

The samples were collected by 306 undergraduate students which is approximately 83.15% of expected quantity of samples size (368 samples), helped by faculties and staff of each faculty in every university.

The samples can be divided in two types by average score of the HSP scale as HSP and non-HSP and these average scores are significantly different with each other. Interestingly, the whole samples have average score of the HSP scale and Psycap in high level but average level in self-compassion scale.

The multiple correlation test also shows the highly relationship inversely between Sensory Processing Sensitivity (SPS) and Self-compassion (SCompass) by significance at the 0.01 level, but SPS is not significant with psychological capital (Psycap) be. Interestingly, there is a positively correlation between Psycap and SCompass, including their components such as correlation between resilience and SCompass ($p < 0.001$) which is same as previous study that show their relationship (Chan et al., 2022). This is because self-compassion can be an essential factor to increase the level of resilience in undergraduate student to find the meaning of life during studying in university (Chan et al., 2022, p. 1495).

1.2 The causal model of positive psychological factors and sensory processing sensitivity in undergraduate students

The SEM for this study has a Squared Multiple Correlation (R^2) value of 0.372, which all variables can describe as a variation of about 37.20% in its model. With the result as a standard solution model, it shows the goodness of fit in this model with the hypothesis found the Chi-square/degree of freedom about 2.3090 (p-value = 0.00059), SRMR = 0.0694 which passes the criteria as a fair consistency for this model, GFI = 0.973, RMSEA = 0655. In conclusion, this model is consistent as empirical evidence for the study.

There is a significant direct relationship between SPS and Psycap with a total effect score of about 0.18, and the level of SPS will increase once the level of Psycap increases. It is the same as the result from Gulla, B., & Golonka, K. (2021) who see the positive relationship between resilience and low sensory threshold, which is also one of the factors in SPS. Moreover, there is another research also indicated that Psycap can encourage sensitive person, being as a vantage sensitivity which is a positive trait such as individuals who have a goal setting and being ready to challenge their goals (Luthans & Youssef-Morgan, 2017, p. 345).

These results can be assumed that SPS can be regulated properly within HSP during comfortable situations or events, whether increasing Psycap can encourage and support HSP. Even not confirming the significant relationship according

to the results of multiple correlation tests and SEM model, There is a study has described the relationship between SPS and resilience as one of the factors of Psycap that SPS associated with resilience and attention awareness inversely as an important way to deal with negative thought during having sensitivity (Gulla, B., & Golonka, K., 2021). The SPS is linked to increasing levels of distress and anxiety. This evidence indicated the opposite relationship from this study, assuming an unclear assumption for the relationship between SPS and Psycap, according to the different situations. It can assume the relationship inversely while facing difficult or uncomfortable situations or events. In contrast, this study cannot assume the relationship between SPS and Psycap significantly because they can be associated directly or inversely or both, which is as refer to another study about SPS and self-efficacy as also one of the factors in Psycap which is not reveal the relationship between each of them but just mentioned about the positive relation between SPS and emotional exhaustion (Lindsay, J. S., 2017).

There is also a significantly inverse relationship between SPS and self-compassion, with a total effect score of about -0.66, which means the level of SPS will increase once self-compassion decreases. Sensory Processing Sensitivity relates to self-compassion in the opposite way, whether HSP can be more sensitive when a lower level of self-compassion, especially for mindfulness, is one of the factors of self-compassion. However, no study indicates whether the higher or lower level of SPS is the lower level of mindfulness (Bakker & Moulding, 2012). This explanation shows the challenge for SPS to face uncomfortable situations or events because of the ability of aesthetic sensitivity to environments (external factors). They are very easy to excite in both positive and negative environments, confirming the difficulty of controlling this ability during an immediate change of mind. HSPs do not need so much time for self-compassion, whether mindfulness, kindness, or common humanity, because they are good at observing their deepening. It can be assumed that undergraduate students have a positive trait, which is a secure attachment style to adjust one's life while studying on campus as the result of a negative relationship between self-compassion

and SPS, and they know the purpose of studying in the faculty of education, which is why they prefer to be a teacher of academic personnel.

Moreover, this study's sample group shows a positive relationship between SPS and Psycap. In contrast, SPS and self-compassion are referred to as having a negative relationship. Whether Psycap and self-compassion can affect SPS. Previous studies showed a correlation between SPS and Psycap and between SPS and self-compassion in both positive and negative ways. These are because SPS can be influenced by environmental factors such as internal and external situations and events, including stimuli such as drinks with caffeine (Ishibashi et al., 2022). It is interesting that late adolescents in university, as the sample group in this study who have sensitivity, can live peacefully in a proper environment to encourage them to achieve better academic success. For example, undergraduate students who study at a university that has a supportive academic environment can reflect it in positive ways through social and emotional reactions, increase the higher level of personal personality related to SPS, which is agreeableness with being kind, cooperative, and forgiving (Trå, Volden, & Watten, 2022), and lastly, develop SPS in a positive way for themselves. On the other hand, the possibility of vulnerability in HSP can encourage the authentic leadership skills of students with a high level of SPS. They have better self-awareness traits and genuinely accept sincere feedback from their respected supervisors and lecturers. These can be shown in students when they stay in comfortable events or situations that are non-threatening environments that can increase their level of resilience. (Luthans F. Youssef C. M. & Avolio B. J., 2007)

2.Suggestion for this study

2.1 Suggestion for implications

This study aims to explore more information on undergraduate students in Thai universities who study in the faculty of education who are HSPs and usually face difficult situations or events while studying in university, especially before going to a senior year that need to intern for teaching period in random school. It helps them to figure out who they are as a sensitive person and know how to deal with their mind,

whether in a good or bad environment. They can study at the university and intern at the school with the proper way of thought and be successors in studying. This study of causal relationship between psychological factors and SPS can be applied by encouraging the psychological factors as an armour to protect each of them during uncomfortable situations and events and succeed their study path before career decision such as increasing the level of self-compassion in undergraduate student to dare to challenge their goal in study and ready to handle an any academic struggling and success in the way they persuade to be after graduation.

2.2 Suggestion for the further study

It is interesting to have more research in other ranges of age for the population to study the causal model between sensory processing sensitivity and positive psychological factors, which are psychological Capital and self-compassion, or even the same range of age but different contexts, such as undergraduate students that study in different field of study.

More research should be done about sensory processing sensitivity in relationship with other positive psychological capital, not only psychological capital, or self-compassion

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APPENDIX

Appendix A

Professionals for research instruments evaluation

Professionals for research instruments evaluation

Associate Professor Nitipat Mekkhachorn, Ph. D,	Lecturer in School of Educational Studies, Sukhothai Thammathirat Open University
Assistant Professor Orn-uma Charoensuk, Ph. D.	Lecturer in Department of Educational Measurement and Research, Faculty of Education, Srinakharinwirot University
Assistant Professor Chutima Suraseth, Ph. D.	Lecturer in Department of Educational Research and Psychology, Faculty of Education, Chulalongkorn University

Appendix B

Item-Objective Congruence of research instruments

Table 17 Item-Objective Congruence of Highly Sensitive Person Scale: Thai Version

item	Scores from professionals (+1, 0 & -1)			Total score	IOC	Evaluation	Use
	Professionals 1	Professionals 2	Professionals 3				
1	1	1	1	3	1.000	Qualified	Try Out
2	1	1	1	3	1.000	Qualified	Try Out
3	1	1	1	3	1.000	Qualified	Try Out
4	1	0	1	2	0.667	Qualified	Try Out
5	-1	0	1	0	0.000	Not qualified	Revised & Try Out
6	1	0	0	1	0.333	Not qualified	Revised & Try Out
7	1	1	0	2	0.667	Qualified	Try Out
8	1	0	1	2	0.667	Qualified	Try Out
9	0	1	1	2	0.667	Qualified	Try Out
10	0	1	1	2	0.667	Qualified	Try Out
11	0	1	1	2	0.667	Qualified	Try Out
12	1	1	-1	1	0.333	Not qualified	Revised & Try Out
13	1	1	1	3	1.000	Qualified	Try Out
14	1	1	1	3	1.000	Qualified	Try Out
15	1	1	1	3	1.000	Qualified	Try Out
16	1	1	1	3	1.000	Qualified	Try Out
17	0	0	1	1	0.333	Not qualified	Revised & Try Out
18	1	1	1	3	1.000	Qualified	Try Out
19	1	1	1	3	1.000	Qualified	Try Out
20	1	1	1	3	1.000	Qualified	Try Out
21	1	1	1	3	1.000	Qualified	Try Out
22	1	1	1	3	1.000	Qualified	Try Out
23	1	0	1	2	0.667	Qualified	Try Out

24	1	0	-1	0	0.000	Not qualified	Revised & Try Out
25	1	1	1	3	1.000	Qualified	Try Out
26	1	1	1	3	1.000	Qualified	Try Out
27	-1	1	0	0	0.000	Not qualified	Revised & Try Out

Table 18 Item-Objective Congruence of Psychological capital Scale for Undergraduate Student: Thai Version

item	Scores from professionals (+1, 0 & -1)			Scores from professionals (+1, 0 & -1)	Scores from professionals (+1, 0 & -1)	Evaluation	Use
	Professionals 1	Professionals 2	Professionals 3				
1	1	1	1	3	1.000	Qualified	Try Out
2	1	1	1	3	1.000	Qualified	Try Out
3	1	1	1	3	1.000	Qualified	Try Out
4	1	1	1	3	1.000	Qualified	Try Out
5	1	1	1	3	1.000	Qualified	Try Out
6	1	1	1	3	1.000	Qualified	Try Out
7	1	1	1	3	1.000	Qualified	Try Out
8	1	1	1	3	1.000	Qualified	Try Out
9	1	1	1	3	1.000	Qualified	Try Out
10	1	1	1	3	1.000	Qualified	Try Out
11	1	1	1	3	1.000	Qualified	Try Out
12	1	1	1	3	1.000	Qualified	Try Out
13	1	1	1	3	1.000	Qualified	Try Out
14	1	1	1	3	1.000	Qualified	Try Out
15	1	1	1	3	1.000	Qualified	Try Out
16	1	1	1	3	1.000	Qualified	Try Out
17	1	1	-1	1	0.333	Not qualified	Revised & Try Out

18	1	1	1	3	1.000	Qualified	Try Out
19	1	1	1	3	1.000	Qualified	Try Out
20	1	1	1	3	1.000	Qualified	Try Out
21	1	1	1	3	1.000	Qualified	Try Out
22	0	1	1	2	0.667	Qualified	Try Out
23	1	1	1	3	1.000	Qualified	Try Out
24	1	1	1	3	1.000	Qualified	Try Out
25	1	1	1	3	1.000	Qualified	Try Out
26	1	1	1	3	1.000	Qualified	Try Out
27	1	1	1	3	1.000	Qualified	Try Out
28	1	1	1	3	1.000	Qualified	Try Out
29	1	1	1	3	1.000	Qualified	Try Out
30	0	0	1	1	0.333	Not qualified	Revised & Try Out
31	0	1	1	2	0.667	Qualified	Try Out
32	0	0	1	1	0.333	Not qualified	Revised & Try Out
33	1	1	1	3	1.000	Qualified	Try Out
34	0	1	1	2	0.667	Qualified	Try Out
35	1	1	1	3	1.000	Qualified	Try Out
36	1	1	1	3	1.000	Qualified	Try Out
37	1	1	1	3	1.000	Qualified	Try Out
38	1	1	1	3	1.000	Qualified	Try Out
39	1	1	0	2	0.667	Qualified	Try Out

Table 19 Item-Objective Congruence of Self-Compassion Scale: Thai Version

item	Scores from professionals (+1, 0 & -1)			Scores from professionals (+1, 0 & -1)	Scores from professionals (+1, 0 & -1)	Evaluation	Use
	Professionals 1	Professionals 2	Professionals 3				
1	1	1	1	3	1.000	Qualified	Try Out
2	1	1	1	3	1.000	Qualified	Try Out
3	1	1	1	3	1.000	Qualified	Try Out
4	1	1	1	3	1.000	Qualified	Try Out
5	0	1	1	2	0.667	Qualified	Try Out
6	1	1	1	3	1.000	Qualified	Try Out
7	1	1	1	3	1.000	Qualified	Try Out
8	1	1	1	3	1.000	Qualified	Try Out
9	0	1	1	2	0.667	Qualified	Try Out
10	1	1	1	3	1.000	Qualified	Try Out
11	1	1	1	3	1.000	Qualified	Try Out
12	1	1	1	3	1.000	Qualified	Try Out
13	1	1	1	3	1.000	Qualified	Try Out
14	1	1	0	2	0.667	Qualified	Try Out
15	1	1	1	3	1.000	Qualified	Try Out
16	1	1	0	2	0.667	Qualified	Try Out
17	1	1	1	3	1.000	Qualified	Try Out
18	1	1	0	2	0.667	Qualified	Try Out
19	1	1	1	3	1.000	Qualified	Try Out
20	1	1	1	3	1.000	Qualified	Try Out
21	1	1	1	3	1.000	Qualified	Try Out
22	0	1	1	2	0.667	Qualified	Try Out
23	1	1	1	3	1.000	Qualified	Try Out
24	1	1	1	3	1.000	Qualified	Try Out

25	0	1	0	1	0.333	Not qualified	Revised & Try Out
26	1	1	0	2	0.667	Qualified	Try Out
27	1	1	0	2	0.667	Qualified	Try Out
28	1	1	1	3	1.000	Qualified	Try Out
29	1	1	1	3	1.000	Qualified	Try Out
30	1	1	1	3	1.000	Qualified	Try Out
31	1	1	1	3	1.000	Qualified	Try Out
32	1	1	0	2	0.667	Qualified	Try Out
33	1	1	1	3	1.000	Qualified	Try Out
34	1	1	1	3	1.000	Qualified	Try Out
35	0	1	0	1	0.333	Not qualified	Revised & Try Out
36	1	1	1	3	1.000	Qualified	Try Out
37	1	1	1	3	1.000	Qualified	Try Out
38	0	1	0	1	0.333	Not qualified	Revised & Try Out
39	1	1	1	3	1.000	Qualified	Try Out
40	1	1	0	2	0.667	Qualified	Try Out

The item that has IOC average score below .500, is revised again by professionals' s comments for content validity and will be calculated by try out as an item's revision process. (McCowan, R.J., & McCowan, S.C., 1999: 13)

Appendix C

Power of discrimination and Reliability of research instruments

Table 20 Power of discrimination of Highly Sensitive Person Scale: Thai Version

item	Mean	SD	Power of discrimination (r)	
			Before	After
1	2.7143	.78857	.594	.594
2	3.2286	.59832	.623	.623
3	2.8286	.82197	.361	.361
4	3.3429	.68354	.497	.497
5	3.6571	.59125	.662	.662
6	3.6571	.68354	.753	.753
7	3.0000	.93934	.453	.453
8	3.2571	.65722	.535	.535
9	3.1429	.49366	.560	.560
10	3.4286	.65465	.535	.535
11	3.6000	.65079	.535	.535
12	3.3714	.64561	.494	.494
13	3.2000	.47279	.496	.496
14	3.2857	.57248	.621	.621
15	3.5714	.55761	.208	.208
16	3.0857	.56211	.734	.734
17	3.2000	.58410	.653	.653
18	3.5429	.61083	.541	.541
19	3.5143	.61220	.456	.456
20	3.5429	.65722	.569	.569
21	3.5429	.70054	.614	.614
22	3.4857	.65849	.523	.523
23	3.5143	.70174	.641	.641
24	3.4857	.70174	.584	.584
25	3.2286	.64561	.616	.616
26	3.2857	.51856	.467	.467
27	3.5714	.55761	.422	.422

Table 21 Reliability of Highly Sensitive Person Scale: Thai Version

	Before	After
Reliability	.925	0.925

Table 22 Power of discrimination of psychological capital Scale for Undergraduate Student: Thai Version

item	Mean	SD	Power of discrimination (r)	
			Before	After
1	4.0857	.50709	.627	.576
2	4.1714	.56806	.745	.717
3	4.5143	.50709	.311	.244
4	4.5143	.56211	.241	.171
5	4.3429	.59125	.321	.370
6	4.2571	.56061	.557	.629
7	4.3429	.59125	.428	.509
8	4.6286	.49024	.367	.311
9	4.6286	.49024	.422	.347
10	1.6286	.54695	-.682	Rejected
11	4.3143	.52979	.352	.449
12	4.1714	.45282	.541	.658
13	4.2571	.50543	.609	.648
14	4.2000	.47279	.610	.648
15	3.1143	.90005	.280	.506
16	3.7429	.56061	.393	.418
17	2.2571	.50543	.011	Rejected
18	3.5714	.69814	.319	.567

19	4.0571	.53922	.477	.635
20	4.0286	.56806	.483	.584
21	3.9429	.59125	.644	.674
22	4.0286	.61767	.681	.758
23	4.0286	.61767	.665	.752
24	3.9714	.61767	.648	.711
25	2.4571	.61083	.057	Rejected
26	2.5429	.50543	.012	Rejected
27	2.5714	.55761	-.197	Rejected
28	2.4000	.65079	-.432	Rejected
29	3.8000	.58410	.427	.450
30	2.1143	.52979	-.352	Rejected
31	2.3714	.59832	-.316	Rejected
32	2.5143	.65849	-.432	Rejected
33	3.5714	.60807	.248	.470
34	3.7714	.54695	.326	.431
35	2.0857	.50709	-.401	Rejected
36	3.8857	.40376	.000	Rejected
37	3.3429	.59125	.223	.352
38	3.8571	.60112	.217	.153
39	3.8000	.67737	.215	.140

Table 23 Reliability of Psychological capital Scale for Undergraduate Student: Thai Version

	Before	After
Reliability	.752	.909

Table 24 Power of discrimination of Self-Compassion Scale: Thai Version

item	Mean	SD	Power of discrimination (r)	
			Before	After
1	2.8857	.47101	.305	.460
2	2.1429	.42997	-.072	Rejected
3	3.9714	.51368	-.201	Rejected
4	2.1429	.49366	-.139	Rejected
5	4.3714	.68966	.356	.222
6	4.3429	.76477	.272	.143
7	4.3429	.76477	.170	Rejected
8	4.2000	.63246	-.049	Rejected
9	2.0000	.68599	.000	Rejected
10	4.0286	.51368	-.323	Rejected
11	3.8857	.58266	-.308	Rejected
12	2.3714	.68966	.279	.404
13	3.8286	.61767	-.230	Rejected
14	2.2286	.64561	-.023	Rejected
15	2.2571	.74134	-.071	Rejected
16	3.7429	.44344	-.028	Rejected
17	3.8000	.53137	-.284	Rejected
18	2.1429	.60112	.052	Rejected
19	3.8286	.51368	-.304	Rejected
20	2.6571	.63906	.437	.702
21	2.5714	.69814	.596	.771
22	2.5714	.69814	.513	.710
23	2.5429	.74134	.362	.589
24	2.3143	.47101	-.103	Rejected
25	3.7143	.45835	-.112	Rejected

26	3.6571	.68354	-.594	Rejected
27	2.5714	.65465	.590	.672
28	3.4571	.65722	-.493	Rejected
29	3.4571	.65722	-.563	Rejected
30	3.6286	.54695	-.283	Rejected
31	2.3429	.63906	.229	.422
32	2.5143	.61220	.469	.670
33	3.5429	.56061	-.669	Rejected
34	2.4857	.65849	.541	.722
35	2.4286	.60807	.121	Rejected
36	3.7429	.56061	-.450	Rejected
37	2.3143	.63113	.021	Rejected
38	2.2286	.59832	.217	.258
39	3.9714	.51368	-.186	Rejected
40	2.1143	.52979	-.129	Rejected

Table 25 Reliability of Self-Compassion Scale: Thai Version

	Before	After
Reliability	-.022	.852

Appendix D

Research instruments in Thai

ส่วนที่ 1 แบบสอบถามข้อมูลทั่วไป

แบบสอบถามข้อมูลทั่วไปประกอบด้วย เพศโดยกำเนิด เพศสภาพ อายุ ชั้นปีที่กำลังศึกษา สาขาวิชาที่ศึกษา คณะที่ศึกษา และมหาวิทยาลัยที่กำลังศึกษา

คำชี้แจง ขอความกรุณากรอกข้อมูลให้ครบถ้วนเพื่อประโยชน์ในการนำไปใช้การงานวิจัยได้อย่างสมบูรณ์

เพศโดยกำเนิด ( ) ชาย ( ) หญิง

เพศสภาพ ( ) ชาย ( ) หญิง ( ) กลุ่มบุคคลที่มีความหลากหลายทางเพศ

อายุ .....

กำลังศึกษาชั้นปีที่ .....

สาขาวิชา.....

คณะ .....

มหาวิทยาลัย.....

ส่วนที่ 2 แบบวัดความอ่อนไหวง่าย สำหรับนิสิตนักศึกษา ฉบับภาษาไทย
(Highly Sensitive Person Scale: Thai Version)

คำชี้แจง โปรดนึกถึงความเป็นตัวคุณที่ผ่านมาตั้งแต่อดีตจนถึงปัจจุบัน และตอบว่าข้อความต่อไปนี้ ตรงกับสิ่งที่คุณมักจะรู้สึกหรือไม่ โดยทำเครื่องหมาย x ลงในช่องตัวเลขที่ตรงกับความรู้สึกของท่านมากที่สุดเพียงคำตอบเดียว ซึ่งคำตอบที่ท่านเลือกตอบในแต่ละข้อนั้นไม่มีคำตอบที่ ถูก หรือ ผิด ขอความกรุณาให้ท่านตอบคำถามให้ครบทุกข้อ

ข้อความ	***ไม่ตรงกับตัวฉันอย่างยิ่ง***	***ไม่ตรงกับตัวฉัน***	***ทั้งตรงและไม่ตรงพอ ๆ กัน***	***ตรงกับตัวฉัน***	***ตรงกับตัวฉันอย่างยิ่ง***
1. ฉันรู้สึกอึดอัดได้ง่ายเมื่อได้สัมผัสกับสิ่งแวดล้อมที่มีการเปลี่ยนแปลงอย่างรวดเร็ว (เช่น อากาศเย็น หรือ ร้อนเกินไป เป็นต้น)					
2. ฉันรู้สึกถึงรายละเอียดแม้เพียงเล็กน้อยที่อยู่ในสิ่งแวดล้อมรอบตัวได้อย่างรวดเร็ว	1	2	3	4	5
3. อารมณ์ของคนอื่น เช่น ครูอาจารย์ เพื่อน พ่อแม่ หรือ ญาติพี่น้อง มีผลต่อจิตใจของฉัน	1	2	3	4	5
4. ฉันมักจะมีความไวต่อความเจ็บปวดมากกว่าปกติ	1	2	3	4	5
5. ในวันที่รู้สึกยุ่ง ฉันอยากจะปลีกตัวไปนอนบนเตียง หรือ อยู่ในห้องมืด ๆ หรือสถานที่มีความเป็นส่วนตัว เพื่อบรรเทาจิตใจจากความวุ่นวาย	1	2	3	4	5
6. ฉันไวต่อฤทธิ์ของคาเฟอีน จากการดื่มชา หรือ กาแฟ	1	2	3	4	5
7. ฉันเกิดความรู้สึกอึดอัดได้ง่ายกับแสงจ้า กลิ่นแรง ๆ เนื้อผ้าหยาบ ๆ หรือ เสียง	1	2	3	4	5

สัญญาณรถฉุกเฉินที่ส่งเสียงอยู่ใกล้ ๆ					
8. ฉันมีความคิดจิตใจที่ซับซ้อนและลึกซึ้ง	1	2	3	4	5
9. เมื่อฉันได้รับการกระตุ้น เช่น ได้ยินเสียงดังจากคน หรือ สิ่งของ ฉันจะรู้สึกได้ถึงความไม่สบายใจของตนเอง	1	2	3	4	5
10. ฉันมีความรู้สึกประทับใจ สะเทือนใจอย่างลึกซึ้ง หรือ มีอารมณ์ร่วมอย่างท่วมท้นกับศิลปะ หรือ ดนตรี	1	2	3	4	5
11. บางครั้งสมองของฉันก็รู้สึกกังวลและเหนื่อยล้าจนฉันต้องปลีกตัวออกไปอยู่คนเดียว	1	2	3	4	5
12. ฉันมีสติรับรู้สิ่งต่าง ๆ รอบตัวอยู่เสมอ	1	2	3	4	5
13. ฉันเป็นคนที่ตระหนกตกใจได้ง่ายกับเหตุการณ์ หรือ สิ่งต่าง ๆ ที่เกิดขึ้น	1	2	3	4	5
14. ฉันจะกระวนกระวายใจ เมื่อต้องทำหลาย ๆ อย่างในเวลาจำกัด	1	2	3	4	5
15. เมื่อคนอื่น ๆ ต้องอยู่ในสถานที่ที่ทำให้พวกเขารู้สึกไม่สะดวกสบาย ฉันรู้ว่าต้องทำอะไรเพื่อให้พวกเขารู้สึกสบายขึ้นได้ (เช่น ปรับแสง หรือ ย้ายที่นั่ง)	1	2	3	4	5
16. ฉันจะรู้สึกรำคาญใจ เวลามีคนพยายามให้ฉันทำหลาย ๆ เรื่องในเวลาเดียวกัน	1	2	3	4	5
17. ฉันพยายามอย่างยิ่งที่จะหลีกเลี่ยงไม่ให้ตัวเองทำอะไรผิดพลาด หรือ ลืมบางสิ่งบางอย่าง	1	2	3	4	5

18. ฉันตั้งใจหลีกเลี่ยงที่จะไม่ชมภาพยนตร์และรายการโทรทัศน์ที่มีเนื้อหารุนแรง เนื่องจากจะส่งผลต่อฉัน เช่น นอนไม่หลับ	1	2	3	4	5
19. ฉันจะถูกกระตุ้นด้วยความรู้สึกที่ไม่น่าพึงพอใจเมื่อมีเรื่องต่างๆ เกิดขึ้นพร้อมกันรอบตัวฉัน เช่น ไม่สบายใจ หรือ อึดอัดใจ เมื่ออยู่ในบรรยากาศของคนรอบข้างที่ทะเลาะ หรือ เสียงดังใส่กัน หรือ มีความสุขทันทีที่ได้เห็นคนช่วยเหลือ และทำดีต่อกัน	1	2	3	4	5
20. เมื่อฉันหิวมาก ความหิวจะกระตุ้นฉันอย่างรุนแรงทำให้สมาธิขาดช่วง หรืออารมณ์สะดุด	1	2	3	4	5
21. ฉันจะรู้สึกตกใจและอารมณ์ไม่ดีเวลาที่มีความเปลี่ยนแปลงต่างๆ เกิดขึ้นในชีวิตในทางลบต่อตัวฉัน	1	2	3	4	5
22. ฉันสังเกตเห็นและรู้สึกเพลิดเพลินกับกลิ่น รส เสียง และงานศิลป์ที่มีความประณีต	1	2	3	4	5
23. ฉันรู้สึกว่าการที่เรื่องต่าง ๆ เกิดขึ้นพร้อมกันอย่างทันทีทันใด เป็นสิ่งที่ไม่น่าพอใจ	1	2	3	4	5
24. ฉันให้ความสำคัญอย่างมากกับการวางแผนชีวิต (เช่น การเรียน การใช้ชีวิตหรือการประกอบอาชีพในอนาคต) เพื่อหลีกเลี่ยงสถานการณ์ที่จะทำให้ฉันรู้สึกไม่ดีหรือรู้สึกซึ่งอึดอัดภายในใจอย่างยิ่ง	1	2	3	4	5

25. ฉันรู้สึกรำคาญเมื่อต้องเจอกับ เสียงดัง หรือ อยู่ท่ามกลางเหตุการณ์ที่วุ่นวาย	1	2	3	4	5
26. เมื่อฉันต้องเข้าแข่งขันหรือมีคนเฝ้าสังเกตเวลาฉันแสดงความสามารถ ฉันจะรู้สึกประหม่าหรือสั่นจนฉันทำได้แย่กว่าความเป็นจริง	1	2	3	4	5
27. ในอดีตหรือปัจจุบันที่ฉันเป็นนักเรียนหรือ นิสิตนักศึกษา พ่อแม่ หรือ ครูอาจารย์ มักมองว่า ฉันเป็นคนอ่อนไหว	1	2	3	4	5

ส่วนที่ 3 แบบวัดทุนทางจิตวิทยาของนิสิต/นักศึกษา ฉบับภาษาไทย

(Psychological capital Scale for Undergraduate Student: Thai Version)

คำชี้แจง โปรดทำเครื่องหมาย x ลงในช่องตัวเลขที่ตรงกับตัวท่านมากที่สุดเพียงคำตอบเดียว ซึ่งคำตอบที่ท่านเลือกตอบในแต่ละข้อนั้นไม่มีคำตอบที่ ถูก หรือ ผิด ขอความกรุณาให้ท่านตอบคำถามให้ครบทุกข้อ

ข้อความ	***ไม่จริงที่สุด***	***ไม่จริง***	***ไม่แน่ใจ***	***จริง***	***จริงที่สุด***
1. ฉันมีการกำหนดเป้าหมายในการเรียนของตนเอง	1	2	3	4	5
2. ฉันมีการวางแผนการเรียนของตนเองเพื่อให้สอดคล้องกับเป้าหมายที่กำหนดไว้	1	2	3	4	5
3. เมื่อฉันได้รับมอบหมายงานในการเรียน ฉันตั้งใจจะทำงานให้เสร็จตามเป้าหมายที่กำหนด	1	2	3	4	5
4. ฉันคิดหาวิธีต่าง ๆ เพื่อให้การเรียนของฉันสำเร็จตามเป้าหมายที่กำหนดไว้	1	2	3	4	5
5. เมื่อมีอุปสรรคในการเรียน ฉันสามารถหาทางออกที่เหมาะสมได้	1	2	3	4	5
6. เมื่อการเรียนของฉันไม่เป็นไปตามแผน ฉันจะปรับแผนการเรียนใหม่	1	2	3	4	5

7. ฉันมีความอุตสาหะในการเรียนเพราะจะทำให้ฉันสำเร็จในการเรียน	1	2	3	4	5
8. ฉันมีความมุ่งมั่นตั้งใจเรียนเพื่อให้บรรลุเป้าหมายที่กำหนด	1	2	3	4	5
9. ฉันหวังว่าฉันจะเรียนจบตามเป้าหมายที่ฉันตั้งไว้	1	2	3	4	5
10. ฉันเชื่อว่าอาจารย์มีความปรารถนาดีต่อนิสิตนักศึกษา จึงตักเตือนเมื่อฉันทำงานผิดพลาด	1	2	3	4	5
11. เมื่อเกิดสิ่งเลวร้ายกับฉัน ฉันคิดว่ามันจะผ่านพ้นไปได้	1	2	3	4	5
12. ฉันมีความสุขในการเรียน แม้ว่าจะมีภาระงานที่หนัก	1	2	3	4	5
13. การที่ฉันมีความเพียรพยายามในการเรียน ทำให้ฉันมั่นใจว่าฉันจะมีผลการเรียนที่ดีขึ้น	1	2	3	4	5
14. แม้ว่าฉันจะมีอุปสรรคในการเรียน ฉันก็พร้อมที่จะแก้ไขให้สำเร็จได้	1	2	3	4	5
15. หากฉันมีความมุ่งมั่นในการเรียนจะทำให้ฉันมีความเจริญก้าวหน้าในอนาคต	1	2	3	4	5
16. แม้ผลการเรียนของฉันจะไม่ดีเท่าที่ควร แต่ฉันคิดว่าในอนาคตมันจะดีขึ้น	1	2	3	4	5
17. ภาระหน้าที่ในการเรียนทำให้ฉันมีความอดทนมากขึ้น	1	2	3	4	5
18. การมุ่งมั่นในการเรียนในขณะนี้ จะมีประโยชน์สำหรับฉันในอนาคต	1	2	3	4	5
19. ฉันเชื่อว่าฉันสามารถจัดการกับการเรียนของตนเองได้	1	2	3	4	5
20. ฉันเชื่อว่าฉันสามารถจัดการกับภาระหน้าที่การเรียนของตนเองได้	1	2	3	4	5
21. ฉันเชื่อว่าฉันสามารถเรียนให้บรรลุตามเป้าหมายที่กำหนดได้	1	2	3	4	5

22. ฉันเชื่อว่าผลการเรียนของฉันจะเป็นไปตามที่คาดหวังไว้	1	2	3	4	5
23. ฉันเชื่อว่าตนเองสามารถจัดการกับภาระความรับผิดชอบด้านการเรียนได้ดี	1	2	3	4	5
24. เมื่อฉันมีความขัดแย้งกับเพื่อนในเรื่องการเรียน ฉันสามารถควบคุมอารมณ์ตนเองได้	1	2	3	4	5
25. แม้ว่าปัญหาทางการเรียนจะหนัก แต่ฉันสามารถผ่านพ้นไปได้	1	2	3	4	5
26. แม้ผลการเรียนของฉันจะต่ำกว่าที่คาดหวัง แต่ฉันยังคงมีความมุ่งมั่นปรับปรุงตนเองใหม่	1	2	3	4	5
27. แม้จะต้องเผชิญกับอุปสรรคในการเรียน แต่ฉันก็ไม่รู้สึกท้อแท้	1	2	3	4	5
28. ฉันคิดว่าอุปสรรคในการเรียนทำให้ฉันมีความมุ่งมั่นในการเรียนมากขึ้น	1	2	3	4	5

ส่วนที่ 4 แบบวัดความกรุณาต่อตนเอง ฉบับภาษาไทย (Self-Compassion Scale: Thai Version)

คำชี้แจง โปรดทำเครื่องหมาย x ลงในช่องตัวเลขที่ตรงกับตัวท่านมากที่สุดเพียงคำตอบเดียว ซึ่งคำตอบที่ท่านเลือกตอบในแต่ละข้อนั้นไม่มีคำตอบที่ ถูก หรือ ผิด ขอความกรุณาให้ท่านตอบคำถามให้ครบทุกข้อ

ข้อความ	***ไม่จริงเลย***	***ไม่จริง***	***ไม่แน่ใจ***	***จริง***	***จริงที่สุด***
1. สาเหตุของความผิดพลาดต่าง ๆ ที่เกิดขึ้นในชีวิตของฉันล้วนเป็นเพราะฉันเอง	1	2	3	4	5
2. ตัวฉันสามารถทำประโยชน์ให้กับบุคคลรอบข้างและสังคมได้	1	2	3	4	5
3. ฉันยอมรับและพยายามปรับปรุงจุดด้อยของตนเอง	1	2	3	4	5
4. ความล้มเหลวที่เกิดขึ้นทำให้คุณค่าของตัวฉันลดลง	1	2	3	4	5
5. ความผิดพลาด หรือความล้มเหลวในชีวิตเป็นเรื่องที่	1	2	3	4	5

น่ากลัวสำหรับฉัน					
6. เมื่อฉันถูกตำหนิ มันยากที่จะทำใจให้ยอมรับได้	1	2	3	4	5
7. ในขณะที่ฉันต้องดิ้นรนเพื่อผ่านปัญหาอุปสรรคบางอย่าง ฉันกลับรู้สึกว่าคนอื่นสามารถก้าวผ่านปัญหาได้อย่างง่ายดายในเรื่องเดียวกัน	1	2	3	4	5
8. เมื่อต้องเผชิญความทุกข์ ฉันเหมือนอยู่ตัวคนเดียว	1	2	3	4	5
9. ฉันรู้สึกหงุดหงิดหรือไม่พอใจเมื่อมีคนเห็นต่างจากความเห็นฉัน	1	2	3	4	5
10. เมื่อฉันรู้สึกแย่หรือไม่ดี ฉันคิดว่าทุกอย่างรอบตัวเองนั้นผิดไปหมด	1	2	3	4	5
11. เมื่อฉันล้มเหลวจากการทำสิ่งสำคัญบางอย่าง ฉันครุ่นคิดแต่ผลด้านลบที่จะตามมา	1	2	3	4	5
12. เมื่อฉันรู้สึกโกรธ ฉันมักแสดงออกถึงความโกรธของฉันทั้งสีหน้า แววตา และคำพูดทันที	1	2	3	4	5
13. ฉันรู้สึกเป็นกังวลทุกครั้งเมื่อต้องคิดถึงเรื่องในอนาคต	1	2	3	4	5

Appendix E

Results of study

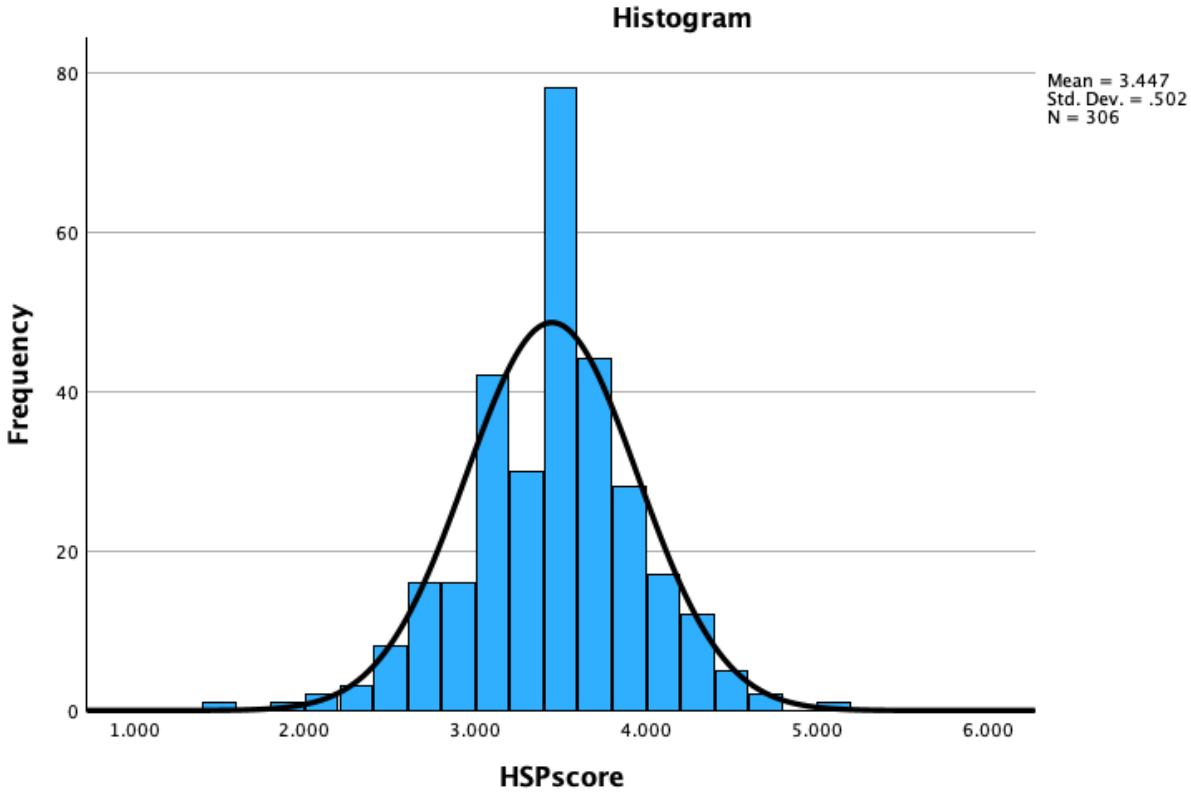
Part 1: The percentile of sensory processing sensitivity score of samples

1.1 The test of normal distribution of HSPscore in HSP and non HSP

Raw score	Frequency	Percent	Valid Percent	Percentile	Z-score	T-score
1.407	1	.3	.3	.3	-4.064	9.36
1.815	1	.3	.3	.7	-3.251	17.49
2.000	1	.3	.3	1.0	-2.882	21.18
2.111	1	.3	.3	1.3	-2.661	23.39
2.296	1	.3	.3	1.6	-2.293	27.07
2.333	1	.3	.3	2.0	-2.219	27.81
2.370	1	.3	.3	2.3	-2.146	28.55
2.444	1	.3	.3	2.6	-1.998	30.02
2.481	2	.7	.7	3.3	-1.924	30.76
2.519	1	.3	.3	3.6	-1.849	31.51
2.556	2	.7	.7	4.2	-1.775	32.25
2.593	2	.7	.7	4.9	-1.701	32.99
2.630	6	2.0	2.0	6.9	-1.628	33.72
2.667	1	.3	.3	7.2	-1.554	34.46
2.704	4	1.3	1.3	8.5	-1.480	35.20
2.741	4	1.3	1.3	9.8	-1.407	35.93
2.778	1	.3	.3	10.1	-1.333	36.67
2.815	2	.7	.7	10.8	-1.259	37.41
2.852	4	1.3	1.3	12.1	-1.185	38.15
2.889	4	1.3	1.3	13.4	-1.112	38.88
2.926	4	1.3	1.3	14.7	-1.038	39.62
2.963	2	.7	.7	15.4	-0.964	40.36
3.000	6	2.0	2.0	17.3	-0.891	41.09
3.037	9	2.9	2.9	20.3	-0.817	41.83
3.074	5	1.6	1.6	21.9	-0.743	42.57
3.111	8	2.6	2.6	24.5	-0.670	43.30

3.148	8	2.6	2.6	27.1	-0.596	44.04
3.185	6	2.0	2.0	29.1	-0.522	44.78
3.222	5	1.6	1.6	30.7	-0.448	45.52
3.259	7	2.3	2.3	33.0	-0.375	46.25
3.296	3	1.0	1.0	34.0	-0.301	46.99
3.333	11	3.6	3.6	37.6	-0.227	47.73
3.370	4	1.3	1.3	38.9	-0.154	48.46
3.407	15	4.9	4.9	43.8	-0.080	49.20
3.444	9	2.9	2.9	46.7	-0.006	49.94
3.481	15	4.9	4.9	51.6	0.067	50.67
3.519	13	4.2	4.2	55.9	0.143	51.43
3.556	15	4.9	4.9	60.8	0.217	52.17
3.593	11	3.6	3.6	64.4	0.291	52.91
3.630	6	2.0	2.0	66.3	0.364	53.64
3.667	9	2.9	2.9	69.3	0.438	54.38
3.704	9	2.9	2.9	72.2	0.512	55.12
3.741	11	3.6	3.6	75.8	0.585	55.85
3.778	9	2.9	2.9	78.8	0.659	56.59
3.815	10	3.3	3.3	82.0	0.733	57.33
3.852	4	1.3	1.3	83.3	0.806	58.06
3.889	6	2.0	2.0	85.3	0.880	58.80
3.926	5	1.6	1.6	86.9	0.954	59.54
3.963	3	1.0	1.0	87.9	1.028	60.28
4.000	4	1.3	1.3	89.2	1.101	61.01
4.037	3	1.0	1.0	90.2	1.175	61.75
4.074	3	1.0	1.0	91.2	1.249	62.49
4.111	4	1.3	1.3	92.5	1.322	63.22
4.148	2	.7	.7	93.1	1.396	63.96
4.185	1	.3	.3	93.5	1.470	64.70

4.222	3	1.0	1.0	94.4	1.543	65.43
4.259	5	1.6	1.6	96.1	1.617	66.17
4.296	1	.3	.3	96.4	1.691	66.91
4.333	1	.3	.3	96.7	1.765	67.65
4.370	2	.7	.7	97.4	1.838	68.38
4.407	1	.3	.3	97.7	1.912	69.12
4.481	1	.3	.3	98.0	2.059	70.59
4.519	1	.3	.3	98.4	2.135	71.35
4.556	1	.3	.3	98.7	2.209	72.09
4.593	1	.3	.3	99.0	2.282	72.82
4.704	1	.3	.3	99.3	2.504	75.04
4.741	1	.3	.3	99.7	2.577	75.77
5.000	1	.3	.3	100.0	3.093	80.93
Total	306	100.0	100.0	-	-	-



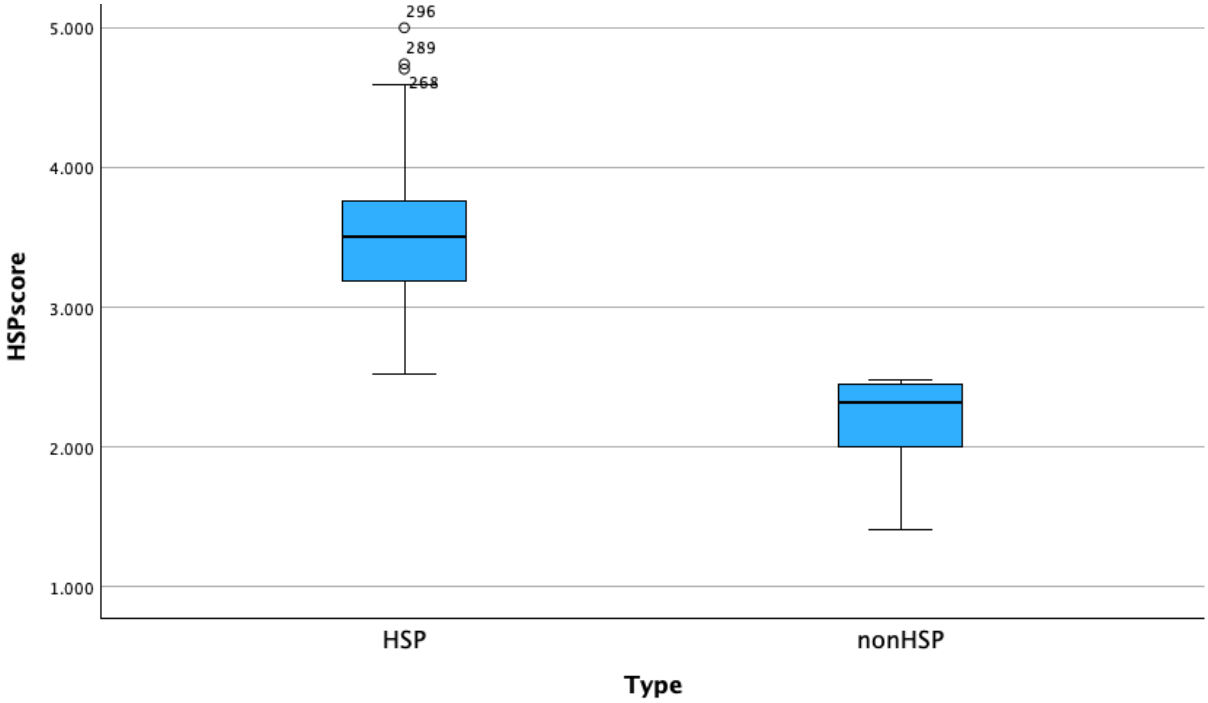
Descriptives

	Type			Statistic	Std. Error
HSPscore	HSP	Mean		3.49015	.025998
		95% Confidence Interval for Mean	Lower Bound	3.43898	
			Upper Bound	3.54131	
		5% Trimmed Mean		3.48331	
		Median		3.50000	
		Variance		.200	
		Std. Deviation		.447292	
		Minimum		2.519	
		Maximum		5.000	
		Range		2.481	
		Interquartile Range		.584	
		Skewness		.199	.142
		Kurtosis		.160	.282
	nonHSP	Mean		2.17380	.110121
		95% Confidence Interval for Mean	Lower Bound	1.92469	
			Upper Bound	2.42291	
		5% Trimmed Mean		2.19933	
		Median		2.31450	
		Variance		.121	
		Std. Deviation		.348233	
		Minimum		1.407	
		Maximum		2.481	
		Range		1.074	
		Interquartile Range		.499	
		Skewness		-1.353	.687
		Kurtosis		1.430	1.334

Tests of Normality

	Type	Kolmogorov-Smirnov[a] Statistic	df	Sig.	Shapiro-Wilk Statistic	df	Sig.
HSPscore	HSP	.058	296	.018	.990	296	.041
	nonHSP	.237	10	.117	.851	10	.060

a. Lilliefors Significance Correction



1.2 The test of normal distribution of HSPscore in different gender

Case Processing Summary

		Cases					
		Valid		Missing		Total	
	Gender	N	Percent	N	Percent	N	Percent
HSPscore	Male	117	100.0%	0	0.0%	117	100.0%
	Female	189	100.0%	0	0.0%	189	100.0%

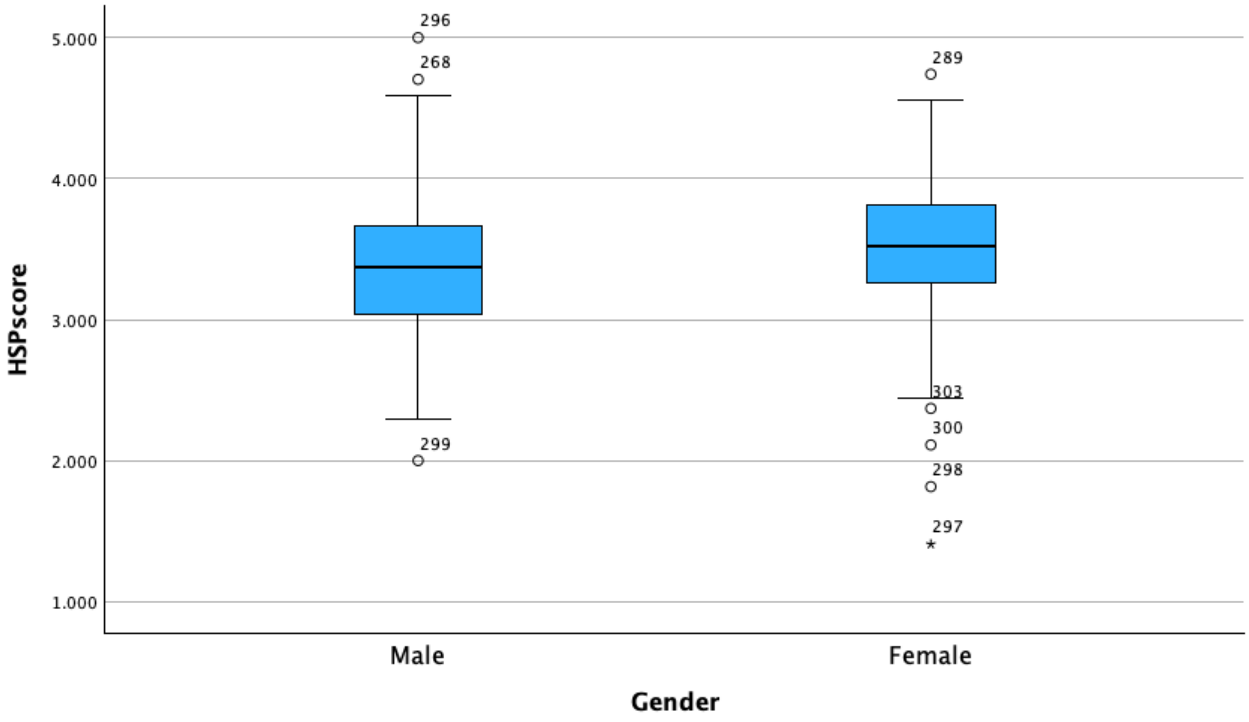
Descriptives

	Gender			Statistic	Std. Error
HSPscore	Male	Mean		3.34699	.043370
		95% Confidence Interval for Mean	Lower Bound	3.26109	
			Upper Bound	3.43289	
		5% Trimmed Mean		3.34237	
		Median		3.37000	
		Variance		.220	
		Std. Deviation		.469116	
		Minimum		2.000	
		Maximum		5.000	
		Range		3.000	
		Interquartile Range		.630	
		Skewness		.212	.224
		Kurtosis		1.332	.444
	Female	Mean		3.50912	.037304
		95% Confidence Interval for Mean	Lower Bound	3.43553	
			Upper Bound	3.58270	
		5% Trimmed Mean		3.52599	
		Median		3.51900	
		Variance		.263	
		Std. Deviation		.512846	
		Minimum		1.407	
		Maximum		4.741	
		Range		3.334	
		Interquartile Range		.556	
		Skewness		-.651	.177
		Kurtosis		1.452	.352

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Gender	Statistic	df	Sig.	Statistic	df	Sig.
HSPscore	Male	.074	117	.169	.974	117	.024
	Female	.109	189	<.001	.972	189	<.001

a. Lilliefors Significance Correction



1.3 The test of normal distribution of HSPscore in different sexuality

Case Processing Summary

		Cases					
		Valid		Missing		Total	
	Sex	N	Percent	N	Percent	N	Percent
HSPscore	Male	84	100.0%	0	0.0%	84	100.0%
	Female	180	100.0%	0	0.0%	180	100.0%
	LGBTQ	42	100.0%	0	0.0%	42	100.0%

Descriptives

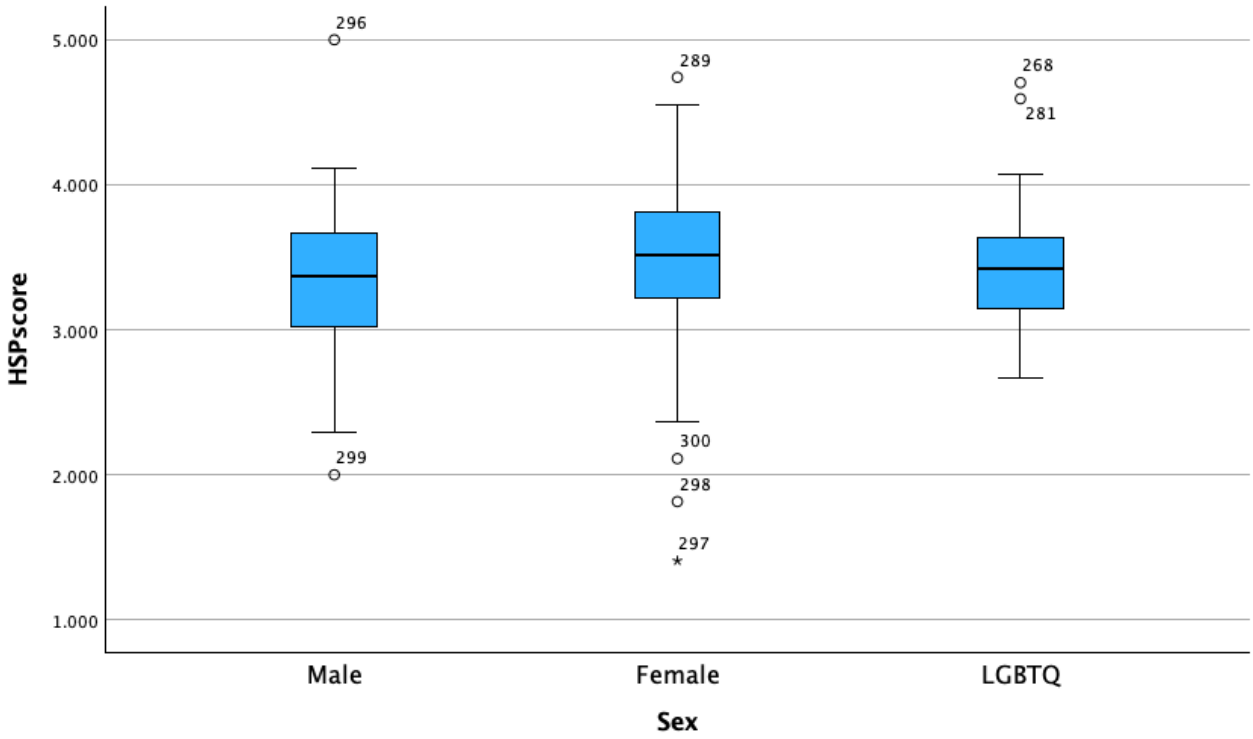
	Sex			Statistic	Std. Error
HSPscore	Male	Mean		3.31837	.051919
		95% Confidence Interval for Mean	Lower Bound	3.21511	
			Upper Bound	3.42163	
		5% Trimmed Mean		3.32417	
		Median		3.37000	
		Variance		.226	
		Std. Deviation		.475842	
		Minimum		2.000	
		Maximum		5.000	
		Range		3.000	
		Interquartile Range		.658	
		Skewness		-.018	.263
		Kurtosis		1.174	.520
	Female	Mean		3.50783	.038953
		95% Confidence Interval for Mean	Lower Bound	3.43096	
			Upper Bound	3.58469	
		5% Trimmed Mean		3.52494	
		Median		3.51900	
		Variance		.273	
		Std. Deviation		.522603	
		Minimum		1.407	
		Maximum		4.741	
		Range		3.334	
		Interquartile Range		.611	
		Skewness		-.645	.181
		Kurtosis		1.323	.360
	LGBTQ	Mean		3.44450	.064377
		95% Confidence Interval for Mean	Lower Bound	3.31449	
			Upper Bound	3.57451	
		5% Trimmed Mean		3.41587	
		Median		3.42550	
		Variance		.174	
		Std. Deviation		.417213	
		Minimum		2.667	
		Maximum		4.704	
		Range		2.037	
		Interquartile Range		.500	
		Skewness		.925	.365
		Kurtosis		1.748	.717

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Sex	Statistic	df	Sig.	Statistic	df	Sig.
HSPscore	Male	.072	84	.200*	.972	84	.063
	Female	.101	180	<.001	.973	180	.002
	LGBTQ	.099	42	.200*	.939	42	.026

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction



1.4 The test of normal distribution of HSPscore in different study year

Case Processing Summary

		Cases					
		Valid		Missing		Total	
	Year	N	Percent	N	Percent	N	Percent
HSPscore	Year 1	185	100.0%	0	0.0%	185	100.0%
	Year 2	55	100.0%	0	0.0%	55	100.0%
	Year 3	63	100.0%	0	0.0%	63	100.0%
	Year 4	3	100.0%	0	0.0%	3	100.0%

Tests of Normality

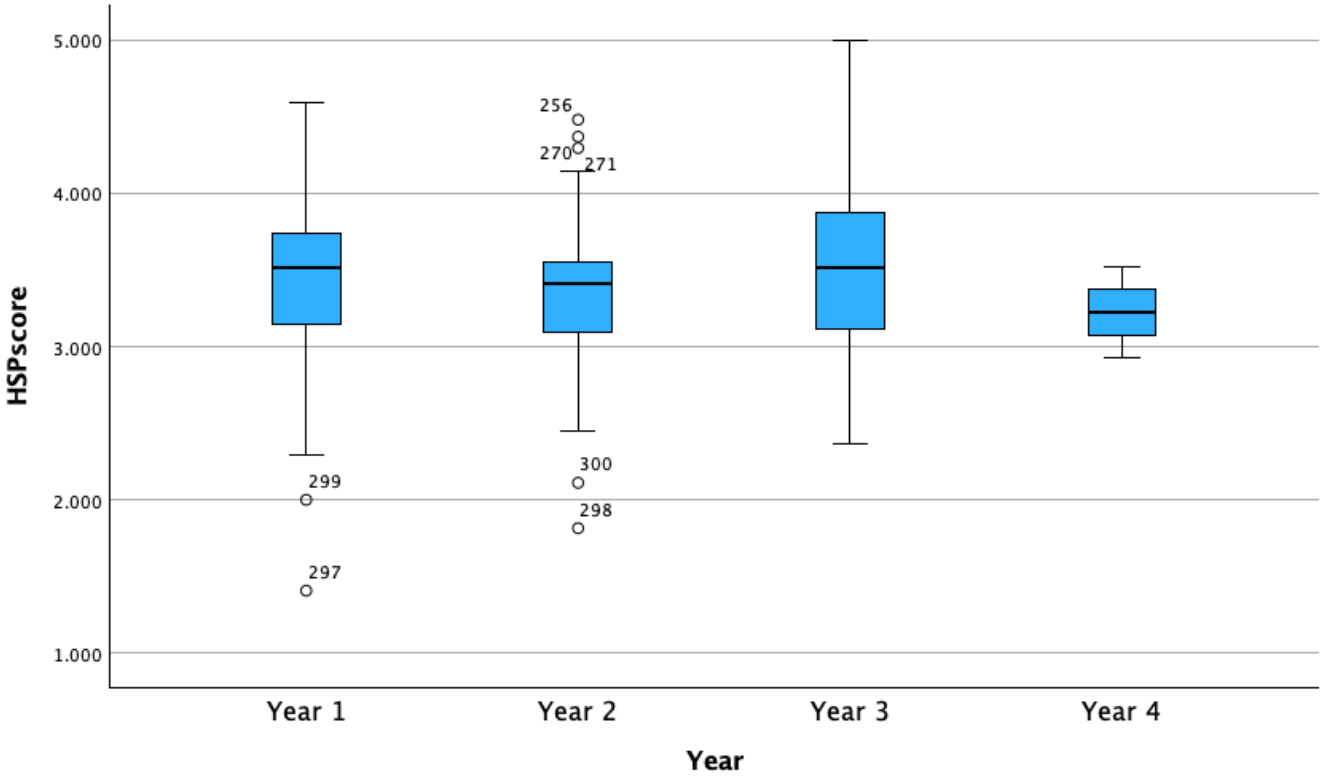
		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Year	Statistic	df	Sig.	Statistic	df	Sig.
HSPscore	Year 1	.089	185	.001	.971	185	<.001
	Year 2	.127	55	.028	.952	55	.027
	Year 3	.073	63	.200*	.986	63	.690
	Year 4	.175	3	.	1.000	3	.998

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Descriptives

	Year			Statistic	Std. Error
HSPscore	Year 1	Mean		3.45290	.035254
		95% Confidence Interval for Mean	Lower Bound	3.38335	
			Upper Bound	3.52246	
		5% Trimmed Mean		3.46552	
		Median		3.51900	
		Variance		.230	
		Std. Deviation		.479507	
		Minimum		1.407	
		Maximum		4.593	
		Range		3.186	
		Interquartile Range		.611	
		Skewness		-.677	.179
		Kurtosis		1.512	.355
	Year 2	Mean		3.36422	.067338
		95% Confidence Interval for Mean	Lower Bound	3.22921	
			Upper Bound	3.49922	
		5% Trimmed Mean		3.37778	
		Median		3.40700	
		Variance		.249	
		Std. Deviation		.499389	
		Minimum		1.815	
		Maximum		4.481	
		Range		2.666	
		Interquartile Range		.482	
		Skewness		-.474	.322
		Kurtosis		1.604	.634
	Year 3	Mean		3.51325	.071758
		95% Confidence Interval for Mean	Lower Bound	3.36981	
			Upper Bound	3.65670	
		5% Trimmed Mean		3.49632	
		Median		3.51900	
		Variance		.324	
		Std. Deviation		.569562	
		Minimum		2.370	
		Maximum		5.000	
		Range		2.630	
		Interquartile Range		.778	
		Skewness		.277	.302
		Kurtosis		-.136	.595
	Year 4	Mean		3.22233	.171184
		95% Confidence Interval for Mean	Lower Bound	2.48579	
			Upper Bound	3.95888	
		5% Trimmed Mean		.	
		Median		3.22200	
		Variance		.088	
		Std. Deviation		.296500	
		Minimum		2.926	
		Maximum		3.519	
		Range		.593	
		Interquartile Range		.	
		Skewness		.005	1.225
		Kurtosis		.	.


HSPscore
5.000
4.000
3.000
2.000
1.000
256
270
271
299
300
298
297
Year 1
Year 2
Year 3
Year 4
Year

1.5 The test of normal distribution of HSPscore in different age

Case Processing Summary

		Cases					
		Valid		Missing		Total	
	Age	N	Percent	N	Percent	N	Percent
HSPscore	18.00	100	100.0%	0	0.0%	100	100.0%
	19.00	105	100.0%	0	0.0%	105	100.0%
	20.00	57	100.0%	0	0.0%	57	100.0%
	21.00	35	100.0%	0	0.0%	35	100.0%
	22.00	7	100.0%	0	0.0%	7	100.0%
	23.00	1	100.0%	0	0.0%	1	100.0%
	24.00	1	100.0%	0	0.0%	1	100.0%

Tests of Normality[c,d]

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Age	Statistic	df	Sig.	Statistic	df	Sig.
HSPscore	18.00	.102	100	.013	.973	100	.036
	19.00	.083	105	.074	.971	105	.020
	20.00	.078	57	.200*	.968	57	.135
	21.00	.106	35	.200*	.982	35	.809
	22.00	.265	7	.147	.911	7	.404

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

c. HSPscore is constant when Age = 23.00. It has been omitted.

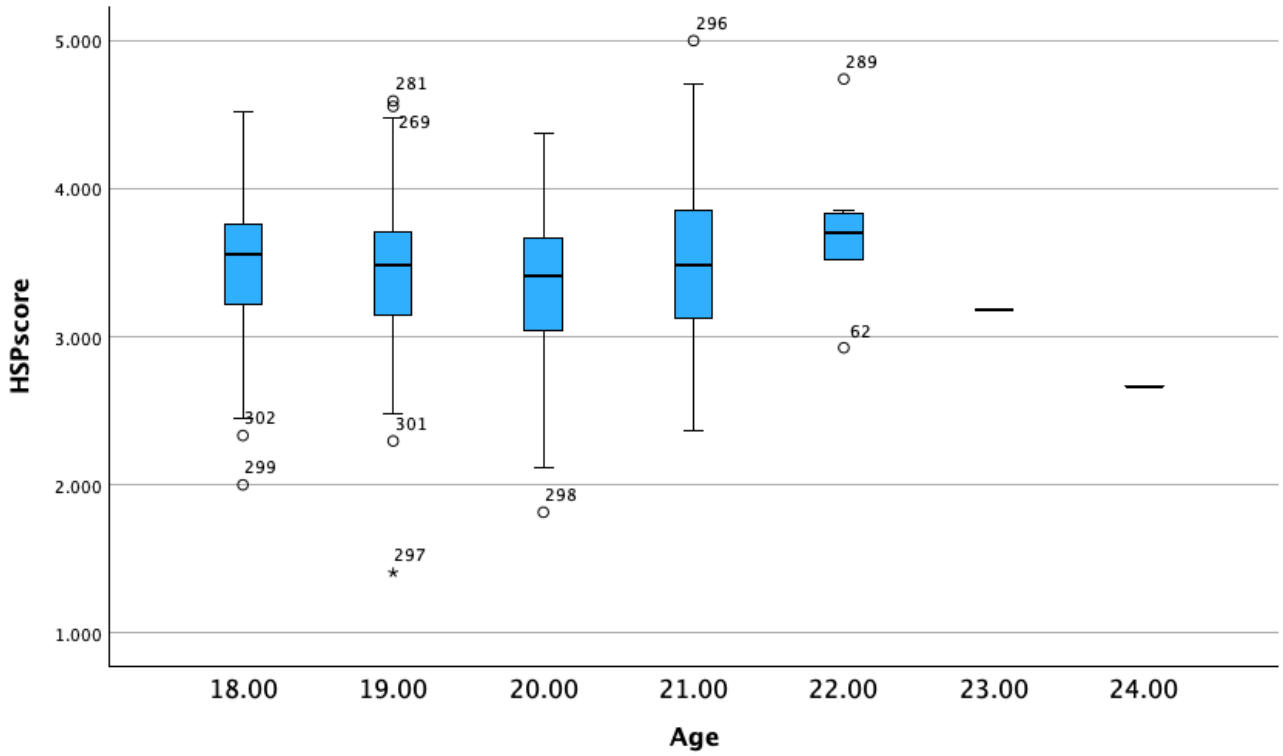
d. HSPscore is constant when Age = 24.00. It has been omitted.

Descriptives[a,b]

	Age			Statistic	Std. Error
HSPscore	18.00	Mean		3.47561	.046773
		95% Confidence Interval for Mean	Lower Bound	3.38280	
			Upper Bound	3.56842	
		5% Trimmed Mean		3.49019	
		Median		3.55600	
		Variance		.219	
		Std. Deviation		.467730	
		Minimum		2.000	
		Maximum		4.519	
		Range		2.519	
		Interquartile Range		.547	
		Skewness		-.602	.241
		Kurtosis		.472	.478
	19.00	Mean		3.41482	.048811
		95% Confidence Interval for Mean	Lower Bound	3.31803	
			Upper Bound	3.51161	
		5% Trimmed Mean		3.42252	
		Median		3.48100	
		Variance		.250	
		Std. Deviation		.500162	
		Minimum		1.407	
		Maximum		4.593	
		Range		3.186	
		Interquartile Range		.593	
		Skewness		-.572	.236
		Kurtosis		1.870	.467
	20.00	Mean		3.39374	.066975
		95% Confidence Interval for Mean	Lower Bound	3.25957	
			Upper Bound	3.52790	
		5% Trimmed Mean		3.41122	
		Median		3.40700	
		Variance		.256	
		Std. Deviation		.505648	
		Minimum		1.815	
		Maximum		4.370	
		Range		2.555	
		Interquartile Range		.649	
		Skewness		-.436	.316
		Kurtosis		1.080	.623
	21.00	Mean		3.52380	.097545
		95% Confidence Interval for Mean	Lower Bound	3.32557	
			Upper Bound	3.72203	
		5% Trimmed Mean		3.50675	
		Median		3.48100	
		Variance		.333	
		Std. Deviation		.577082	
		Minimum		2.370	
		Maximum		5.000	
		Range		2.630	
		Interquartile Range		.778	
		Skewness		.425	.398
		Kurtosis		.385	.778
	22.00	Mean		3.72514	.205878
		95% Confidence Interval for Mean	Lower Bound	3.22138	
			Upper Bound	4.22891	
		5% Trimmed Mean		3.71310	
		Median		3.70400	
		Variance		.297	
		Std. Deviation		.544702	
		Minimum		2.926	
		Maximum		4.741	
		Range		1.815	
		Interquartile Range		.333	
		Skewness		.755	.794
		Kurtosis		2.428	1.587

a. HSPscore is constant when Age = 23.00. It has been omitted.

b. HSPscore is constant when Age = 24.00. It has been omitted.



1.6 The independent sample t-test in HSP and nonHSP groups

Group Statistics

	Type	N	Mean	Std. Deviation	Std. Error Mean
HSP	HSP	296	3.49015	.447292	.025998
	nonHSP	10	2.17380	.348233	.110121

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance				95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
HSP	Equal variances assumed	.686	.408	9.207	304	<.001	<.001	1.316345	.142975	1.035000	1.597691
	Equal variances not assumed			11.634	10.030	<.001	<.001	1.316345	.113148	1.064339	1.568352

Independent Samples Effect Sizes

		Standardizer[a]	Point Estimate	95% Confidence Interval Lower	Upper
HSP	Cohen's d	.444677	2.960	2.285	3.631
	Hedges' correction	.445778	2.953	2.280	3.622
	Glass's delta	.348233	3.780	1.944	5.597

a. The denominator used in estimating the effect sizes.
Cohen's d uses the pooled standard deviation.
Hedges' correction uses the pooled standard deviation, plus a correction factor.
Glass's delta uses the sample standard deviation of the control (i.e., the second) group.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
HSP	306	1.41	5.00	3.4471	.50204	-.323	.139	1.068	.278
LST	306	1.00	5.00	3.1755	.67522	-.271	.139	.316	.278
AS	306	1.00	5.00	3.7022	.52770	-.426	.139	1.688	.278
EOE	306	1.39	5.00	3.4560	.59881	-.238	.139	.561	.278
Psycap	306	2.21	5.00	3.9716	.49006	-.339	.139	.545	.278
Hope	306	1.44	5.00	4.0251	.53051	-.549	.139	1.567	.278
Opt	306	1.78	5.00	4.0178	.54962	-.558	.139	.403	.278
Efficacy	306	1.20	5.00	3.9340	.63614	-.585	.139	1.206	.278
Res	306	1.80	5.00	3.8301	.60436	-.114	.139	-.038	.278
SCompass	306	1.31	4.92	3.2066	.62108	.015	.139	-.078	.278
Kin	306	1.75	5.00	3.6242	.59480	-.141	.139	-.074	.278
Hum	306	1.00	5.00	3.1170	.80867	.126	.139	-.384	.278
Min	306	1.00	5.00	2.9011	.78994	.102	.139	-.168	.278
Valid N (listwise)	306								

Correlations

		HSP	LST	AS	EOE	Psycap	Hope	Opt	Efficacy	Res	SCompass	Kin	Hum	Min
HSP	Pearson Correlation	1	.842**	.636**	.928**	.032	.050	.083	-.021	-.049	-.400**	-.145*	-.396**	-.406**
	Sig. (2-tailed)		<.001	<.001	<.001	.579	.379	.146	.709	.398	<.001	.011	<.001	<.001
	N	306	306	306	306	306	306	306	306	306	306	306	306	306
LST	Pearson Correlation	.842**	1	.359**	.689**	-.051	-.008	-.032	-.064	-.097	-.320**	-.110	-.312**	-.336**
	Sig. (2-tailed)	<.001		<.001	<.001	.376	.891	.572	.262	.089	<.001	.055	<.001	<.001
	N	306	306	306	306	306	306	306	306	306	306	306	306	306
AS	Pearson Correlation	.636**	.359**	1	.416**	.221**	.179**	.256**	.125*	.169**	-.035	.092	-.068	-.073
	Sig. (2-tailed)	<.001	<.001		<.001	<.001	.002	<.001	.029	.003	.540	.107	.238	.202
	N	306	306	306	306	306	306	306	306	306	306	306	306	306
EOE	Pearson Correlation	.928**	.689**	.416**	1	-.018	.008	.043	-.058	-.106	-.485**	-.229**	-.467**	-.468**
	Sig. (2-tailed)	<.001	<.001	<.001		.748	.894	.451	.315	.065	<.001	<.001	<.001	<.001
	N	306	306	306	306	306	306	306	306	306	306	306	306	306
Psycap	Pearson Correlation	.032	-.051	.221**	-.018	1	.877**	.903**	.838**	.795**	.348**	.435**	.271**	.215**
	Sig. (2-tailed)	.579	.376	<.001	.748		<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001
	N	306	306	306	306	306	306	306	306	306	306	306	306	306
Hope	Pearson Correlation	.050	-.008	.179**	.008	.877**	1	.688**	.655**	.584**	.237**	.324**	.167**	.149**
	Sig. (2-tailed)	.379	.891	.002	.894	<.001		<.001	<.001	<.001	<.001	<.001	.003	.009
	N	306	306	306	306	306	306	306	306	306	306	306	306	306
Opt	Pearson Correlation	.083	-.032	.256**	.043	.903**	.688**	1	.688**	.650**	.278**	.364**	.223**	.150**
	Sig. (2-tailed)	.146	.572	<.001	.451	<.001	<.001		<.001	<.001	<.001	<.001	<.001	.008
	N	306	306	306	306	306	306	306	306	306	306	306	306	306
Efficacy	Pearson Correlation	-.021	-.064	.125*	-.058	.838**	.655**	.688**	1	.592**	.343**	.433**	.241**	.243**
	Sig. (2-tailed)	.709	.262	.029	.315	<.001	<.001	<.001		<.001	<.001	<.001	<.001	<.001
	N	306	306	306	306	306	306	306	306	306	306	306	306	306
Res	Pearson Correlation	-.049	-.097	.169**	-.106	.795**	.584**	.650**	.592**	1	.388**	.411**	.346**	.239**
	Sig. (2-tailed)	.398	.089	.003	.065	<.001	<.001	<.001	<.001		<.001	<.001	<.001	<.001
	N	306	306	306	306	306	306	306	306	306	306	306	306	306
SCompass	Pearson Correlation	-.400**	-.320**	-.035	-.485**	.348**	.237**	.278**	.343**	.388**	1	.731**	.908**	.842**
	Sig. (2-tailed)	<.001	<.001	.540	<.001	<.001	<.001	<.001	<.001	<.001		<.001	<.001	<.001
	N	306	306	306	306	306	306	306	306	306	306	306	306	306
Kin	Pearson Correlation	-.145*	-.110	.092	-.229**	.435**	.324**	.364**	.433**	.411**	.731**	1	.530**	.438**
	Sig. (2-tailed)	.011	.055	.107	<.001	<.001	<.001	<.001	<.001	<.001	<.001		<.001	<.001
	N	306	306	306	306	306	306	306	306	306	306	306	306	306
Hum	Pearson Correlation	-.396**	-.312**	-.068	-.467**	.271**	.167**	.223**	.241**	.346**	.908**	.530**	1	.643**
	Sig. (2-tailed)	<.001	<.001	.238	<.001	<.001	.003	<.001	<.001	<.001	<.001	<.001		<.001
	N	306	306	306	306	306	306	306	306	306	306	306	306	306
Min	Pearson Correlation	-.406**	-.336**	-.073	-.468**	.215**	.149**	.150**	.243**	.239**	.842**	.438**	.643**	1
	Sig. (2-tailed)	<.001	<.001	.202	<.001	<.001	.009	.008	<.001	<.001	<.001	<.001	<.001	
	N	306	306	306	306	306	306	306	306	306	306	306	306	306

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

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

Date November 1, 2023

Program: LISREL 12.4.3.0

By

Professor Karl Jöreskog, Ph. D.

```
 !PRELIS SYNTAX: Can be edited
 SY='C:\Users\Tawin Pichyathaninkul\Downloads\231031 twosamplettest.LSF'

 SE 6 7 8 9 10 11 12 13 14 15 16 17 18
 OU MA=CM XM

 Total Sample Size (N) =    306
```

Univariate Summary Statistics for Continuous Variables

Variable	Mean	St. Dev.	Skewness	Kurtosis	Minimum	Freq.	Maximum	Freq.
HSP	3.447	0.502	-0.323	1.068	1.407	1	5.000	1
LST	3.176	0.675	-0.271	0.316	1.000	1	5.000	1
EOE	3.456	0.599	-0.238	0.561	1.385	1	5.000	2
AS	3.702	0.528	-0.426	1.688	1.000	1	5.000	2
Psycap	3.972	0.490	-0.339	0.545	2.214	1	5.000	2
HOP	4.025	0.531	-0.549	1.567	1.444	1	5.000	15
EFF	3.934	0.636	-0.585	1.206	1.200	1	5.000	24
OPT	4.018	0.550	-0.558	0.403	1.778	1	5.000	8
RES	3.830	0.604	-0.114	-0.038	1.800	1	5.000	16
Self-Compassion	3.207	0.621	0.015	-0.078	1.308	1	4.923	1
MIN	3.624	0.595	-0.141	-0.074	1.750	1	5.000	4
KIN	3.117	0.809	0.126	-0.384	1.000	1	5.000	5
HUM	2.901	0.790	0.102	-0.168	1.000	4	5.000	2

Test of Univariate Normality for Continuous Variables

	Skewness		Kurtosis		Skewness and Kurtosis	
Variable	Z-Score	P-Value	Z-Score	P-Value	Chi-Square	P-Value
HSP	-2.295	0.022	2.817	0.005	13.200	0.001
LST	-1.939	0.052	1.147	0.251	5.075	0.079
AS	-2.984	0.003	3.756	0.000	23.012	0.000
EOE	-1.706	0.088	1.781	0.075	6.082	0.048
Psycap	-2.403	0.016	1.742	0.082	8.807	0.012
Hope	-3.757	0.000	3.593	0.000	27.024	0.000
Opt	-3.814	0.000	1.385	0.166	16.464	0.000
Efficacy	-3.975	0.000	3.051	0.002	25.104	0.000

Res	-0.826	0.409	-0.014	0.988	0.683	0.711
SCompass	0.107	0.914	-0.171	0.864	0.041	0.980
Kin		-1.019	0.308	-0.154	0.877	1.062	0.588
Hum	0.916	0.360	-1.607	0.108	3.422	0.181
Min	0.742	0.458	-0.548	0.583	0.852	0.653

Covariance Matrix

	HSP	LST	AS	EOE	Psycap	Hope
HSP	0.252					
LST	0.285	0.456				
AS	0.169	0.128	0.278			
EOE	0.279	0.279	0.131	0.359		
Psycap	0.008	-0.017	0.057	-0.005	0.240	
Hope	0.013	-0.003	0.050	0.002	0.228	0.281
Opt	0.023	-0.012	0.074	0.014	0.243	0.201
Efficacy	-0.007	-0.028	0.042	-0.022	0.261	0.221
Res	-0.015	-0.040	0.054	-0.038	0.236	0.187
SCompass	-0.125	-0.134	-0.012	-0.180	0.106	0.078
Kin	-0.043	-0.044	0.029	-0.082	0.127	0.102
Hum	-0.161	-0.171	-0.029	-0.226	0.107	0.071
Min	-0.161	-0.179	-0.031	-0.221	0.083	0.062

Covariance Matrix

	Opt	Efficacy	Res	SCompass	Kin	Hum
Opt	0.302					

Efficacy	0.241	0.405				
Res	0.216	0.228	0.365			
SCompass	0.095	0.136	0.146	0.386		
Kin	0.119	0.164	0.148	0.270	0.354	
Hum	0.099	0.124	0.169	0.456	0.255	0.654
Min	0.065	0.122	0.114	0.413	0.206	0.410

Covariance Matrix

	Min

Min	0.624

Total Variance = 4.956 Generalized Variance = 0.162980D-12

Largest Eigenvalue = 2.100 Smallest Eigenvalue = -0.703341D-07

Means

HSP	LST	AS	EOE	Psycap	Hope
---	---	---	---	---	---
3.447	3.176	3.702	3.456	3.972	4.025

Means

Opt	Efficacy	Res	SCompass	Kin	Hum
---	---	---	---	---	---
4.018	3.934	3.830	3.207	3.624	3.117

Means

Min
2.901

Standard Deviations

HSP	LST	AS	EOE	Psycap	Hope
0.502	0.675	0.528	0.599	0.490	0.531

Standard Deviations

Opt	Efficacy	Res	SCompass	Kin	Hum
0.550	0.636	0.604	0.621	0.595	0.809

Standard Deviations

Min
0.790

o==========o

| PRELIS used 0.031 CPU seconds. |

o==========o

Date November 5, 2023

Program: LISREL 12.4.3.0

By

Professor Karl Jöreskog, Ph. D.

Program: LISREL 12.4.3.0

Module: Structural Equation Modeling

Store: https://ssilive.com

Website: https://ssicentral.com

Technical Support: support@ssilive.com

Date: 11/05/2023 Time: 22:17:34

---

o==========o

| Standard SEM |

o==========o

The following lines were read from the file C:\Users\Aketawat Kulkayan\Downloads\231101.SPJ:

A model

Observed Variables LST AS EOE Hope Opt Efficacy Res Kin Hum Min

Covariance Matrix

0.456

0.128 0.278

0.279 0.131 0.359

-0.003 0.050 0.002 0.281

-0.012 0.074 0.014 0.201 0.302

-0.028 0.042 -0.022 0.221 0.241 0.405

-0.040 0.054 -0.038 0.187 0.216 0.228 0.365

-0.044 0.029 -0.082 0.102 0.119 0.164 0.148 0.354

-0.171 -0.029 -0.226 0.071 0.099 0.124 0.169 0.255 0.654

-0.179 -0.031 -0.221 0.062 0.065 0.122 0.114 0.206 0.410 0.624

Sample Size=306

Latent Variables hsp psycap scompass

Relationships

LST=hsp

AS=hsp

EOE=hsp

Hope=psycap

Opt=psycap

Efficacy=psycap

Res=psycap

Kin=scompass

Hum=scompass

Min=scompass

hsp=psycap scompass

Set the error variance of EOE equal to .05

Set the error Between Res and Hum Correlate

Set the error Between AS and LST Correlate

Set the error Between Kin and Efficacy Correlate

Set the error Between Opt and AS Correlate

Set the error Between Opt and EOE Correlate

Set the error Between Kin and AS Correlate

Set the error Between Opt and Min Correlate

Set the error Between As and EOE Correlate

Set the error Between Kin and Res Correlate

Set the error Between Kin and LST Correlate

Set the error Between Kin and EOE Correlate

Set the error Between Res and AS Correlate

Set the error Between Kin and Min Correlate

Path Diagram

LISREL OUTPUT: ME=ML EF SS SC MI

End of Problem

A model

Covariance Matrix

LST	AS	EOE	Hope	Opt	Efficacy
---	---	---	---	---	---

LST	0.456					
AS	0.128	0.278				
EOE	0.279	0.131	0.359			
Hope	-0.003	0.050	0.002	0.281		
Opt	-0.012	0.074	0.014	0.201	0.302	
Efficacy	-0.028	0.042	-0.022	0.221	0.241	0.405
Res	-0.040	0.054	-0.038	0.187	0.216	0.228
Kin	-0.044	0.029	-0.082	0.102	0.119	0.164
Hum	-0.171	-0.029	-0.226	0.071	0.099	0.124
Min	-0.179	-0.031	-0.221	0.062	0.065	0.122

Covariance Matrix

	Res	Kin	Hum	Min
Res	0.365			
Kin	0.148	0.354		
Hum	0.169	0.255	0.654	
Min	0.114	0.206	0.410	0.624

Total Variance = 4.078 Generalized Variance = 0.843092D-06

Largest Eigenvalue = 1.616 Smallest Eigenvalue = 0.080

Condition Number = 4.491

A model

Parameter Specifications

LAMBDA-Y

	hsp
LST	0
AS	1
EOE	2

LAMBDA-X

	psycap	scompass
Hope	3	0
Opt	4	0
Efficacy	5	0
Res	6	0
Kin	0	7
Hum	0	8
Min	0	9

GAMMA

	psycap	scompass
hsp	10	11

PHI

	psycap	scompass
psycap	0	
scompass	12	0

PSI

	hsp
	13

THETA-EPS

	LST	AS	EOE
LST	14		
AS	15	16	
EOE	0	0	0

THETA-DELTA-EPS

	LST	AS	EOE
Hope	0	0	0
Opt	0	18	19
Efficacy	0	0	0
Res	0	22	0
Kin	24	25	26
Hum	0	0	0
Min	0	0	0

THETA-DELTA

	Hope	Opt	Efficacy	Res	Kin	Hum
Hope	17					
Opt	0	20				
Efficacy	0	0	21			
Res	0	0	0	23		
Kin	0	0	27	28	29	
Hum	0	0	0	30	0	31
Min	0	32	0	0	33	0

THETA-DELTA

	Min
Min	34

A model

Structural equation model for latent variables

Unstandardized Solution

Number of iterations for Fletcher-Powell algorithm = 16

LISREL Estimates (Maximum Likelihood)

LAMBDA-Y

	hsp
LST	0.492
AS	0.226
	(0.175;
	0.276)
	(0.031)
	7.333
	0.000
EOE	0.552
	(0.494;
	0.609)
	(0.035)
	15.856
	0.000

LAMBDA-X

	psycap	scompass
	---	---
Hope	0.418	- -
	(0.374;	
	0.461)	
	(0.027)	
	15.760	
	0.000	
Opt	0.456	- -
	(0.414;	
	0.498)	
	(0.026)	
	17.831	
	0.000	
Efficacy	0.501	- -
	(0.450;	
	0.552)	
	(0.031)	
	16.143	
	0.000	
Res	0.435	- -
	(0.385;	
	0.484)	
	(0.030)	

	14.430	
	0.000	
Kin	- -	0.427
	(0.362;	
	0.492)	
	(0.040)	
	10.791	
	0.000	
Hum	- -	0.598
	(0.524;	
	0.671)	
	(0.044)	
	13.450	
	0.000	
Min	- -	0.651
	(0.576;	
	0.726)	
	(0.046)	
	14.290	
	0.000	

GAMMA

	psycap	scompass
	--------	--------
hsp	0.177	-0.661

	(0.064;	(-0.793;
	0.290)	-0.529)
	(0.069)	(0.080)
	2.581	-8.214
	0.010	0.000

Covariance Matrix of ETA and KSI

	hsp	psycap	scompass
	--------	--------	--------
hsp	1.000		
psycap	-0.095	1.000	
scompass	-0.588	0.412	1.000

PHI

	psycap	scompass
	--------	--------
psycap	1.000	
scompass	0.412	1.000
	(0.318;	
	0.505)	
	(0.057)	
	7.254	
	0.000	

PSI

hsp

0.628

(0.485;

0.814)

(0.099)

6.340

0.000

Squared Multiple Correlations for Structural Equations

hsp

0.372

Note: R^2 for Structural Equations are Hayduk's (2006) Blocked-Error R^2

Squared Multiple Correlations for Reduced Form

hsp

0.372

THETA-EPS

	LST	AS	EOE
LST	0.210 (0.180; 0.246) (0.020) 10.593 0.000		
AS	0.015 (-0.007; 0.038) (0.014) 1.123 0.262	0.225 (0.196; 0.259) (0.019) 11.940 0.000	
EOE	- -	- -	0.050

Squared Multiple Correlations for Y - Variables

LST	AS	EOE
0.534	0.185	0.859

THETA-DELTA-EPS

	LST	AS	EOE
Hope	- -	- -	- -
Opt	- -	0.035	0.028
	(0.019;	(0.014;	
	0.051)	0.042)	
	(0.010)	(0.008)	
	3.524	3.311	
	0.000	0.001	
Efficacy	- -	- -	- -
Res	- -	0.024	- -
	(0.004;		
	0.043)		
	(0.012)		
	1.980		
	0.048		
Kin	0.077	0.051	0.060
	(0.044;	(0.026;	(0.029;
	0.110)	0.076)	0.090)
	(0.020)	(0.015)	(0.018)
	3.801	3.396	3.232
	0.000	0.001	0.001

Hum	- -	- -	- -
Min	- -	- -	- -

THETA-DELTA

	Hope	Opt	Efficacy	Res	Kin	Hum
	--------	--------	--------	--------	--------	--------
Hope	0.107					
	(0.090;					
	0.126)					
	(0.011)					
	9.678					
	0.000					
Opt	- -	0.079				
	(0.064;					
	0.098)					
	(0.010)					
	7.606					
	0.000					
Efficacy	- -	- -	0.143			
		(0.120;				
		0.170)				
		(0.015)				
		9.450				
		0.000				

Res	- -	- -	- -	0.162					
				(0.139;					
				0.190)					
				(0.016)					
				10.418					
				0.000					
Kin	- -	- -	0.038	0.040	0.160				
			(0.018;	(0.019;	(0.122;				
			0.058)	0.061)	0.210)				
			(0.012)	(0.013)	(0.027)				
			3.150	3.096	6.019				
			0.002	0.002	0.000				
Hum	- -	- -	- -	0.057	- -	0.289			
				(0.032;		(0.236;			
				0.083)		0.353)			
				(0.016)		(0.035)			
				3.662		8.174			
				0.000		0.000			
Min	- -	-0.038	- -	- -	-0.083	- -			
		(-0.057;			(-0.129;				
		-0.018)			-0.037)				
		(0.012)			(0.028)				
		-3.191			-2.975				
		0.001			0.003				

THETA-DELTA

	Min
Min	0.198
	(0.143;
	0.273)
	(0.039)
	5.116
	0.000

Squared Multiple Correlations for X - Variables

Hope	Opt	Efficacy	Res	Kin	Hum
0.621	0.725	0.637	0.538	0.532	0.553

Squared Multiple Correlations for X - Variables

Min
0.682

A model

Structural equation model for latent variables

Standardized Solution

LAMBDA-Y

	hsp

LST	0.492
AS	0.226
	(0.176;
	0.276)
	(0.030)
	7.475
	0.000
EOE	0.552
	(0.509;
	0.594)
	(0.026)
	21.425
	0.000

LAMBDA-X

	psycap	scompass
	--------	--------
Hope	0.418	- -
	(0.374;	
	0.461)	
	(0.027)	
	15.760	

	0.000		
Opt	0.456	- -	
	(0.414;		
	0.498)		
	(0.026)		
	17.831		
	0.000		
Efficacy	0.501	- -	
	(0.450;		
	0.552)		
	(0.031)		
	16.143		
	0.000		
Res	0.435	- -	
	(0.385;		
	0.484)		
	(0.030)		
	14.430		
	0.000		
Kin	- -	0.427	
		(0.362;	
		0.492)	
		(0.040)	
		10.791	
		0.000	

Hum	- -	0.598
		(0.524;
		0.671)
		(0.044)
		13.450
		0.000
Min	- -	0.651
		(0.576;
		0.726)
		(0.046)
		14.290
		0.000

GAMMA

	psycap	scompass
	--------	--------
hsp	0.177	-0.661
	(0.065;	(-0.747;
	0.285)	-0.553)
	(0.067)	(0.059)
	2.641	-11.244
	0.008	0.000

PHI

	psycap	scompass
psycap	1.000	
scompass	0.412 (0.318; 0.505) (0.057) 7.254 0.000	1.000

PSI

	hsp
	0.628 (0.521; 0.724) (0.062) 10.084 0.000

THETA-EPS

	LST	AS	EOE
LST	0.210		

	(0.161;	
	0.274)	
	(0.034)	
	6.195	
	0.000	
AS	0.015	0.225
	(-0.008;	(0.189;
	0.038)	0.269)
	(0.014)	(0.024)
	1.107	9.290
	0.268	0.000
EOE	- -	- - 0.050

THETA-DELTA-EPS

	LST	AS	EOE
	--------	--------	--------
Hope	- -	- -	- -
Opt	- -	0.035	0.028
		(0.019;	(0.012;
		0.051)	0.043)
		(0.010)	(0.009)
		3.496	2.951
		0.000	0.003

Efficacy	- -	- -	- -
Res	- -	0.024	- -
		(0.004;	
		0.043)	
		(0.012)	
		1.978	
		0.048	
Kin	0.077	0.051	0.060
	(0.043;	(0.026;	(0.027;
	0.110)	0.076)	0.093)
	(0.020)	(0.015)	(0.020)
	3.760	3.375	2.978
	0.000	0.001	0.003
Hum	- -	- -	- -
Min	- -	- -	- -

THETA-DELTA

	Hope	Opt	Efficacy	Res	Kin	Hum
	---	---	---	---	---	---
Hope	0.107					
	(0.090;					
	0.126)					
	(0.011)					
	9.678					
	0.000					

Opt	- -	0.079			
		(0.064;			
		0.098)			
		(0.010)			
		7.606			
		0.000			
Efficacy	- -	- -	0.143		
			(0.120;		
			0.170)		
			(0.015)		
			9.450		
			0.000		
Res	- -	- -	- -	0.162	
				(0.139;	
				0.190)	
				(0.016)	
				10.418	
				0.000	
Kin	- -	- -	0.038	0.040	0.160
			(0.018;	(0.019;	(0.122;
			0.058)	0.061)	0.210)
			(0.012)	(0.013)	(0.027)
			3.150	3.096	6.019
			0.002	0.002	0.000

Hum	- -	- -	- -	0.057	- -	0.289
				(0.032;		(0.236;
				0.083)		0.353)
				(0.016)		(0.035)
				3.662		8.174
				0.000		0.000
Min	- -	-0.038	- -	- -	-0.083	- -
		(-0.057;			(-0.129;	
		-0.018)			-0.037)	
		(0.012)			(0.028)	
		-3.191			-2.975	
		0.001			0.003	

THETA-DELTA

	Min

Min	0.198
	(0.143;
	0.273)
	(0.039)
	5.116
	0.000

A model

Structural equation model for latent variables

Completely Standardized Solution

LAMBDA-Y

	hsp

LST	0.731
AS	0.430
	(0.343;
	0.509)
	(0.050)
	8.527
	0.000
EOE	0.927
	(0.916;
	0.936)
	(0.006)
	151.865
	0.000

LAMBDA-X

	psycap	scompass
	---	---
Hope	0.788	- -
	(0.740;	
	0.828)	
	(0.027)	
	29.570	
	0.000	
Opt	0.851	- -
	(0.809;	
	0.885)	
	(0.023)	
	37.378	
	0.000	
Efficacy	0.798	- -
	(0.751;	
	0.837)	
	(0.026)	
	30.896	
	0.000	
Res	0.734.	- -
	(0.679;	
	0.780)	
	(0.031)	

		23.896
		0.000
Kin	- -	0.729
		(0.628;
		0.806)
		(0.054)
		13.548
		0.000
Hum	- -	0.743
		(0.675;
		0.799)
		(0.037)
		19.914
		0.000
Min	- -	0.826
		(0.750;
		0.880)
		(0.039)
		21.212
		0.000

GAMMA

	psycap	scompass
	--------	--------
hsp	0.177	-0.661

	(0.065;	(-0.747;
	0.285)	-0.553)
	(0.067)	(0.059)
	2.641	-11.244
	0.008	0.000

PHI

	psycap	scompass
	---	---
psycap	1.000	
scompass	0.412	1.000
	(0.314;	
	0.500)	
	(0.057)	
	7.254	
	0.000	

PSI

hsp

0.628
(0.521;
0.724)
(0.062)
10.084
0.000

THETA-EPS

	LST	AS	EOE
LST	0.466 (0.393; 0.540) (0.045) 10.340 0.000		
AS	0.044 (-0.020; 0.107) (0.039) 1.126 0.260	0.815 (0.734; 0.876) (0.043) 18.841 0.000	
EOE	- -	- -	0.050

THETA-DELTA-EPS

	LST	AS	EOE
Hope	- -	- -	- -
Opt	- -	0.124 (0.068; 0.180)	0.087 (0.044; 0.130)

(0.034) (0.026)

3.634 3.353

0.000 0.001

Efficacy - - - - - -

Res - - 0.076 - -

(0.013;

0.138)

(0.038)

2.002

0.045

Kin 0.195 0.166 0.171

(0.113; (0.088; (0.085;

0.274) 0.243) 0.255)

(0.049) (0.047) (0.052)

3.972 3.533 3.322

0.000 0.000 0.001

Hum - - - - - -

Min - - - - - -

THETA-DELTA

Hope	Opt	Efficacy	Res	Kin	Hum
---	---	---	---	---	---

Hope	0.379			
	(0.313;			
	0.450)			
	(0.042)			
	9.031			
	0.000			
Opt	- -	0.275		
		(0.216;		
		0.343)		
		(0.039)		
		7.101		
		0.000		
Efficacy	- -	- -	0.363	
			(0.299;	
			0.433)	
			(0.041)	
			8.817	
			0.000	
Res	- -	- -	- -	0.462
				(0.389;
				0.536)
				(0.045)
				10.252
				0.000

Kin	- -	- -	0.104	0.115	0.468
			(0.050;	(0.055;	(0.344;
			0.157)	0.175)	0.596)
			(0.032)	(0.036)	(0.079)
			3.207	3.167	5.959
			0.001	0.002	0.000

Hum	- -	- -	- -	0.121	- - 0.447
				(0.068;	(0.359;
				0.173)	0.539)
				(0.032)	(0.056)
				3.755	8.060
				0.000	0.000

Min	- -	-0.089	- -	- -	-0.180 - -
		(-0.135;			(-0.277;
		-0.044)			-0.080)
		(0.028)			(0.060)
		-3.234			-3.008
		0.001			0.003

THETA-DELTA

	Min
---	---
Min	0.318
	(0.223;
	0.432)
	(0.064)

4.952

0.000

Log-likelihood Values

	Estimated Model	Saturated Model
Number of free parameters(t)	34	55
-2ln(L)	-1171.284	-1219.774
AIC (Akaike, 1974)*	-1103.284	-1109.774
BIC (Schwarz, 1978)*	-976.794	-905.157

*LISREL uses AIC= 2t - 2ln(L) and BIC = tln(N)- 2ln(L)

Goodness-of-Fit Statistics

Degrees of Freedom for (C1)-(C2)	21
Maximum Likelihood Ratio Chi-Square (C1)	48.490 (P = 0.00059)
Browne's (1984) ADF Chi-Square (C2_NT)	47.099 (P = 0.00091)
Estimated Non-centrality Parameter (NCP)	27.490
90 Percent Confidence Interval for NCP	(10.954 ; 51.734)
Minimum Fit Function Value	0.159
Population Discrepancy Function Value (F0)	0.0901
90 Percent Confidence Interval for F0	(0.0359 ; 0.170)
Root Mean Square Error of Approximation (RMSEA)	0.0655
90 Percent Confidence Interval for RMSEA	(0.0414 ; 0.0899)

P-Value for Test of Close Fit (RMSEA < 0.05) 0.134

Expected Cross-Validation Index (ECVI) 0.382
90 Percent Confidence Interval for ECVI (0.328 ; 0.461)
ECVI for Saturated Model 0.361
ECVI for Independence Model 4.649

Chi-Square for Independence Model (45 df) 1397.874

Normed Fit Index (NFI) 0.965
Non-Normed Fit Index (NNFI) 0.956
Parsimony Normed Fit Index (PNFI) 0.450
Comparative Fit Index (CFI) 0.980
Incremental Fit Index (IFI) 0.980
Relative Fit Index (RFI) 0.926

Critical N (CN) 245.882

Root Mean Square Residual (RMR) 0.0238
Standardized RMR 0.0694
Goodness of Fit Index (GFI) 0.973
Adjusted Goodness of Fit Index (AGFI) 0.929
Parsimony Goodness of Fit Index (PGFI) 0.371

A model

Modification Indices and Expected Change

No Non-Zero Modification Indices for LAMBDA-Y

Modification Indices for LAMBDA-X

	psycap	scompass
Hope	- -	3.843
Opt	- -	0.003
Efficacy	- -	1.084
Res	- -	1.490
Kin	14.091	- -
Hum	1.412	- -
Min	3.645	- -

Expected Change for LAMBDA-X

	psycap	scompass
Hope	- -	-0.050
Opt	- -	0.001
Efficacy	- -	0.034
Res	- -	0.042
Kin	0.156	- -
Hum	-0.058	- -
Min	-0.099	- -

Standardized Expected Change for LAMBDA-X

	psycap	scompass

Hope	- -	-0.050
Opt	- -	0.001
Efficacy	- -	0.034
Res	- -	0.042
Kin	0.156	- -
Hum	-0.058	- -
Min	-0.099	- -

Completely Standardized Expected Change for LAMBDA-X

	psycap	scompass
Hope	- -	-0.094
Opt	- -	0.003
Efficacy	- -	0.054
Res	- -	0.071
Kin	0.267	- -
Hum	-0.073	- -
Min	-0.125	- -

No Non-Zero Modification Indices for BETA

No Non-Zero Modification Indices for GAMMA

No Non-Zero Modification Indices for PHI

No Non-Zero Modification Indices for PSI

Modification Indices for THETA-EPS

	LST	AS	EOE
LST	- -		
AS	- -	- -	
EOE	1.352	8.998	6.182

Expected Change for THETA-EPS

	LST	AS	EOE
LST	- -		
AS	- -	- -	
EOE	0.030	0.075	-0.070

Completely Standardized Expected Change for THETA-EPS

	LST	AS	EOE
LST	- -		
AS	- -	- -	
EOE	0.075	0.241	-0.197

Modification Indices for THETA-DELTA-EPS

	LST	AS	EOE
Hope	0.159	2.035	0.242
Opt	0.249	- -	- -

Efficacy	0.429	0.566	0.164
Res	0.502	- -	0.539
Kin	- -	- -	- -
Hum	1.154	1.916	4.325
Min	0.096	1.480	0.086

Expected Change for THETA-DELTA-EPS

	LST	AS	EOE
Hope	-0.004	0.016	0.004
Opt	0.006	- -	- -
Efficacy	-0.008	0.010	0.004
Res	-0.009	- -	-0.008
Kin	- -	- -	- -
Hum	0.018	0.023	-0.035
Min	0.005	0.019	-0.005

Completely Standardized Expected Change for THETA-DELTA-EPS

	LST	AS	EOE
Hope	-0.012	0.057	0.014
Opt	0.018	- -	- -
Efficacy	-0.019	0.030	0.012
Res	-0.021	- -	-0.022
Kin	- -	- -	- -
Hum	0.034	0.055	-0.073
Min	0.010	0.047	-0.010

Modification Indices for THETA-DELTA

	Hope	Opt	Efficacy	Res	Kin	Hum
Hope	- -					
Opt	0.006	- -				
Efficacy	1.753	1.353	- -			
Res	0.292	1.141	0.477	- -		
Kin	1.346	2.386	- -	- -	- -	
Hum	0.355	0.956	0.755	- -	14.091	- -
Min	3.083	- -	0.064	0.003	- -	14.091

Modification Indices for THETA-DELTA

	Min
Min	- -

Expected Change for THETA-DELTA

	Hope	Opt	Efficacy	Res	Kin	Hum
Hope	- -					
Opt	-0.001	- -				
Efficacy	0.015	-0.015	- -			
Res	-0.006	0.012	-0.008	- -		
Kin	0.012	0.017	- -	- -	- -	
Hum	-0.007	-0.013	0.014	- -	-0.188	- -
Min	-0.024	- -	0.004	-0.001	- -	0.288

Expected Change for THETA-DELTA

	Min
Min	- -

Completely Standardized Expected Change for THETA-DELTA

	Hope	Opt	Efficacy	Res	Kin	Hum
Hope	- -					
Opt	-0.003	- -				
Efficacy	0.046	-0.045	- -			
Res	-0.018	0.036	-0.023	- -		
Kin	0.040	0.055	- -	- -	- -	
Hum	-0.017	-0.030	0.027	- -	-0.401	- -
Min	-0.057	- -	0.008	-0.002	- -	0.454

Completely Standardized Expected Change for THETA-DELTA

	Min
Min	- -

- - indicates a value of zero

Maximum Modification Index is 14.09 for Element (6, 5) of THETA-DELTA

A model

Total and Indirect Effects

Total Effects of KSI on ETA

	psycap	scompass
hsp	0.177	-0.661
	(0.064;	(-0.793;
	0.290)	-0.529)
	(0.069)	(0.080)
	2.581	-8.214
	0.010	0.000

Total Effects of ETA on Y

	hsp
LST	0.492
AS	0.226
	(0.175;
	0.276)
	(0.031)
	7.333
	0.000

EOE 0.552

(0.494;

0.609)

(0.035)

15.856

0.000

Total Effects of KSI on Y

	psycap	scompass
LST	0.087	-0.325
	(0.032;	(-0.390;
	0.142)	-0.260)
	(0.034)	(0.040)
	2.581	-8.214
	0.010	0.000
AS	0.040	-0.149
	(0.013;	(-0.190;
	0.067)	-0.108)
	(0.016)	(0.025)
	2.458	-5.989
	0.014	0.000
EOE	0.098	-0.365
	(0.036;	(-0.430;
	0.159)	-0.299)
	(0.037)	(0.040)

2.609 -9.143

0.009 0.000

A model

Standardized Total and Indirect Effects

Standardized Total Effects of KSI on ETA

	psycap	scompass
hsp	0.177	-0.661

Standardized Total Effects of ETA on Y

	hsp
LST	0.492
AS	0.226
EOE	0.552

Completely Standardized Total Effects of ETA on Y

	hsp
LST	0.731
AS	0.430
EOE	0.927

Standardized Total Effects of KSI on Y

	psycap	scompass
LST	0.087	-0.325
AS	0.040	-0.149
EOE	0.098	-0.365

Completely Standardized Total Effects of KSI on Y

	psycap	scompass
LST	0.129	-0.483
AS	0.076	-0.284
EOE	0.164	-0.613

o==========o

| LISREL used 0.047 CPU seconds. |

o==========o

VITA