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The Relationship Between Perceived Executive Function And Subjective Well- Being Among International Students

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Abstract
This study examined the link between perceived executive function and subjective well-being among international students. We hypothesized a positive correlation between these variables. A sample of 110 international students completed an online survey using standardized measures to assess both constructs. Results revealed a significant positive correlation ($r = 0.262$, $p < 0.05$) between perceived executive function and subjective well-being, supporting our hypothesis. This finding indicates that higher phases of perceived executive function are associated with greater subjective well-being among international students. The relationship suggests that stronger executive functions like working memory, inhibitory control, and cognitive adaptability may contribute to better management of academic challenges, cultural adaptation, and stress coping, thereby enhancing overall well-being. These insights are valuable for educational institutions and support services working with international students, highlighting the potential importance of executive function in supporting positive experiences and life satisfaction in this population.

Keywords: *Subjective well-being, executive function, working memory, inhibitory control, cognitive adaptability.*

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I. Introduction:

In a survey of 6,600 students from 81 countries studying for their undergraduate degrees in 2009, over 45% of these international students were found to be suffering from depression and 51% from stress and anxiety. For international students, research has identified a link between the perceived EFs of working memory and planning with subjective well-being, which is a major determinant of health. This research extends the work of Richardson, Abraham, and Bond (2012) on perceived EFs in a sample of nonclinical students with this examination specifically in a nonclinical international student sample. The current examination of executive functions (EF) in a nonclinical sample of international students is timely as there is a growing body of literature suggesting the utility of perceived EF measures, particularly in a group with an elevated risk for poor study adjustment (Luerssen & Ayduk, 2017). These students deal with a range of academic demands including studying in an unfamiliar context, language barriers, learning a new language, and often homesickness (Barry et al., 2017; Gray-Burrows et al., 2019; P, n.d.). The role of executive function in education extends beyond school and into later life. There are substantial lifetime costs associated with lower levels of these functions.

II. Background Of The Study:

On the other hand, executive function (EF) has long been described by various professionals as the control of pause-dependent goal- directed behaviors. EF is a kind of working memory, attention, and inhibitory control, and it is important for academic achievement. Since proficiency in EF contributes to academic success, the focus on EF has continued to increase. With the growth of interest coming from the educational sciences, social sciences, and natural sciences, the research topic on students' executive function (EF) has arisen(Cadime et al., 2016; P, n.d.; Toh et al., 2020). However, nonverbal curiosity, metacognitive attention, goal setting, and verbal communication are a variety of EF that cannot easily be measured. These personal attributes yield a very wide range of grasp production when linking to the character of individual input. These initial results are studied to lead to heightened subjective life satisfaction of students, although most of the research participants claim to have not been confirmed.

Experiencing a range of positive emotions - happiness, engagement, and satisfaction in one's life together with a perceived sense of accomplishment, derives subjective well-being. Lately, researchers have termed subjective well-being "happiness", which measures overall well-being and assesses how a person is

feeling (Robinson & Eid, 2017). It often refers to the affective component of an individual's assessment of overall life quality and, at the same time, the degree to which life is found to be meaningful and rewarding(M. S. E. et al., n.d.). It is worth noticing that subjective well-being is about the sum aggregate of positive feelings, given by a sense of life meaning, determination, positive affect, and demonstrated satisfaction. The purpose of this study is to explore the relationship between perceived executive function and subjective well-being among international students(Corney et al., 2024). For most students, international assignment is an intense life transition, perhaps more so than any other transition associated with these development-related life events. Indeed, the high cognitive, emotional, and cultural demands inherent in so many studies abroad experiences often serve to test the very capacity for regulation of behavior and cognition (Rodríguez et al., 2022). This potential is important not only for the well-being and academic success of international students but also relevant in the context of recent documents which place more emphasis on how universities prepare current and future students for a world of complexity, global interconnectedness and diversity, new dilemmas, and civic and international responsibilities (Corney et al., 2024) For most international students' assignments are an intense life transition, perhaps more so than any other transition associated with these development-related life events. Indeed, the high cognitive, emotional, and cultural demands inherent in so many studies abroad experiences often serve to test the very capacity for regulation of behavior and cognition (Rodríguez et al., 2022). The current study examines the relationship between perceived executive function and subjective well-being among international students. This is important not only for the well-being and academic success of international students but also relevant in the context of recent documents which place more emphasis on how universities prepare current and future students for a world of complexity, global interconnectedness, and diversity, new dilemmas, and civic and international responsibilities. At the community support level, this study will offer insights into the operationalization and measurement of the perceived EF domain and its links with SWB. It also will provide information to improve the well-being of international students during their experiences in the new country. Ultimately, it may prevent students from a range of negative outcomes, such as trauma, anxiety, depression, and adjustment problems, and thus improve academic success and satisfaction related to their host society (Gray-Burrows et al., 2019; Kaufman et al., 2021). These strategies can be implemented via school counselors, international student support departments, and international student office staff to promote the psychological well-being of their students, this is especially critical where the number of international students is significant (Rodríguez et al., 2022; Wong & Yang, 2022). The implementation of new strategies in student well-being should be accompanied by monitoring and evaluation to measure the impact, which might become the focus of future research.

The study contributes to the existing literature associated with perceived EF by examining the relationship between perceived EF and SWB in the university student population. The results contribute to the theoretical grounds of the relationship between perceived EF and SWB and contribute to the future development of the theoretical model. Importantly, the study results will provide essential knowledge that can be used to support the creation of interventions, programs, and strategies to support the SWB of international students. The results can be beneficial at the school level for curriculum design and implementation, by providing a framework to create an environment that supports EF skills. The importance of training EF skills in schools is widely documented, as once developed, these skills are useful across multiple life domains and provide a protective factor against mental health problems.

The relationship between subjective well-being and executive function has gained significant attention in recent research, highlighting a complex interplay that influences individuals' mental health and quality of life. Subjective well-being, often defined as an individual's self-perceived happiness in life, encompasses life satisfaction and affective states. Executive function, a collection of cognitive processes including working memory, flexible thinking, and self-control, is crucial in managing one's behavior and emotions. Recent studies have explored these dynamics, suggesting that executive function may impact subjective well-being through various psychosocial mediators. For instance, a sense of control has been identified as a significant mediator between executive function and life satisfaction, particularly pronounced among older adults(Toh et al., 2020). Furthermore, subjective socioeconomic status has been indirectly linked to executive function via the sense of control and health(L. M. E. & C, n.d.; Toh et al., 2020). As we continue to unravel the intricacies of this relationship, it becomes evident that empowering leadership, cognitive abilities, and health behaviors are also integral components that can influence the connection between executive function and subjective wellbeing(Kim et al., 2018; Yazdani & Siedlecki, 2021). The ongoing research from 2015 to 2024 provides a deeper understanding of how these factors interrelate, paving the way for interventions aimed at enhancing both cognitive functioning and overall well-being. The period from 2015 to 2024 has been marked by a surge in research exploring the nuanced relationship between executive functioning and subjective well-being. This body of work has shed light on the protective role of executive functions, linking them to improved personal relationships, health outcomes, and academic achievement. The research posits that enhancing executive functions may have the potential to increase overall happiness(Luerssen & Ayduk, 2017; Robinson & Eid,

2017). Studies have also investigated the association between sub-domains of executive functioning and resilience and well-being in older adults, finding that certain aspects of executive function are closely tied to an individual's ability to maintain a positive ve outlook despite varying levels of depression symptom severity(Kaufman et al., 2021). Supplementary, research has emphasized the importance of adaptive, goal-directed control processes—central to executive function—in affecting subjective well-being in middle and late adulthood(Toh et al., 2020).

Building upon the initial exploration of the relationship between executive function and subjective well-being, recent literature delves deeper into the mechanisms that may facilitate this connection(Diener, Oishi, et al., 2018; D. E, n.d.; Kaufman et al., 2021; Luerssen & Ayduk, 2017; Wong & Yang, 2022). A study analyzing a nationally representative adult cohort from the Midlife Development in the United States 2 study highlighted the role of a sense of control as a mediator between executive function and subjective well-being, particularly emphasizing its significance in life satisfaction and affective balance(Luerssen & Ayduk, 2017; Yazdani & Siedlecki, 2021). Notably, this mediation effect was found to be stronger among older adults, suggesting that age may play a moderating role in this relationship(Luerssen & Ayduk, 2017; Toh et al., 2020).well-being (Luerssen & Ayduk, 2017). Additionally, the executive function has been proposed as a predictor for variability in health behaviors, underscoring its importance as, a cognitive process that coordinates thought and action(L. M. E. et al., n.d.; Gray-Burrows et al., 2019; K. et al., n.d.; Robinson & Eid, 2017; Yazdani & Siedlecki, 2021). Executive functions (EFs) are top-down mental processes required for concentration and attention, often referred to as executive control or cognitive control. There are three core EFs: inhibition, working memory, and cognitive flexibility (Cristofori et al., 2019; Diamond, 2013). These are used to build higher-order EFs like reasoning, problem-solving, and planning. EFs are essential for mental and physical health, success in school and life, and cognitive, social, and psychological development (Cristofori et al., 2019).

III. Understanding Executive Function:

According to Cristofori et al. (2019), executive function is the set of abilities that enable people to accomplish their goals in an efficient, deliberate, steadfast, and independent manner. The literature primarily defines executive function based on three main domains of EF (Diamond, 2013; McClelland & Cameron, 2019; Miller, 2010). This is because the term lacks a specific definition (Obradovic et al., 2019; Verena Johann, 2019; Wiebe, 2017). These three abilities control our thoughts and behaviors, which in turn dictates how we accomplish a task. The various cognitive operations that are classified as part of executive function include determining how to achieve a task and making decisions about how to move forward. Considering that executive function deliberates mental processes, it allows individuals to plan, aim, make decisions, and carry out a variety of tasks (Zelazo, 2020). Additionally, according to Zink et al. (2021), executive function aids in a person's analysis of their knowledge and awareness as well as their exploration of various avenues for goal achievement. This demonstrates that executive function encompasses behavior since it covers multiple cognitive operations that cooperate to achieve a goal (Friedman & Miyake, 2017; Wiebe, 2017). The summary above suggests that the executive function is responsible for organizing the steps necessary to finish tasks. It effectively creates an action plan by organizing, forming, and choosing the concepts that would help someone accomplish a goal (Vidal Carulla et al., 2021). (Obradovic et al., 2019) argues that creating a plan of action helps someone reach a goal by directing their attention towards staying focused and away from inappropriate actions. Therefore, using executive function would allow for the taking of sensible, self-serving, and appropriate actions to accomplish a goal (Nemeth & Chustz, 2020; Perrotta, 2019). This is so that they can effectively manage, direct, and regulate their thoughts and actions when working on a task.

IV. Development OF Executive Function

Executive function skills are developed by biology in conjunction with genetic factors; however, environmental factors and the context of childhood upbringing also play a role in this process (Vidal Carulla et al., 2021). Ackerman and Friedman- Zink et al. (2021) observed that the development of the skill occurs through the growth of the frontal lobes in adulthood, even though its growth is not particularly linear. Buttelmann and Karbach (2017) contend, however, that even though the majority of mental skills mature during the early years, these stages must first be completed before the skills are fully functional (Delage et al. (2022). state those social interactions, engaging activities, and the learning environment all contribute to the neural connections of executive function. According to Søndergaard Knudsen et al. (2018), curriculum training, individualized training, and teaching skills at home are all factors that support the development of executive function. Last but not least, activities that support the development of executive function skills include video games, computerized training, and martial arts (Diamond, 2020; McClelland & Cameron, 2019). According to Miller (2010), children who face significant stressors daily have a harder time developing executive function because experiences like stress can easily alter the brain connections that support executive function. Many people believe that stressful situations, like living in poverty or going through a traumatic event, can prevent the development of the neural connections

in the brain that support cognitive functioning (Vidal Carulla et al., 2021). Therefore, rather than impeding the development of executive function skills, learning activities ought to be focused on improving them.

V. Pillar Foundation Of Executive Function:

Inhibitory control, or self-regulation, is the first aspect of executive function. According to published research, inhibitory control allows individuals to fight troubles and suppress immediate desire in favor of appropriate behavior (Diamond, 2013; Geeraerts et al., 2021). The capacity to restrain thoughts, feelings, and/or behavior in the face of overwhelming internal desire or outside temptations is known as inhibitory control Zelazo (2020). Without it, we may act impulsively and think or behave in ways that are motivated by incentives that may divert our attention from the most appropriate paths (Geeraerts et al., 2021; Kang et al., 2022). In addition to changing our behavior, this ability helps us to think back on what we did and maybe even save ourselves from awkward situations (Geeraerts et al., 2021; Kang et al., 2022). Many authors acknowledge that kids in preschool exhibit a delay of gratification when they can wait and choose what they want to eat (Diamond, 2020; Mirabella, 2021; Mucha et al., 2020). The capacity to wait means not responding to some, while choosing an item means accepting one while letting go of another. According to research by Mirabella (2021); and Zink et al. (2021), children's inhibitory control gets stronger as they learn how to solve a problem. According to Roebers and Feurer (2015), children's success in a variety of kindergarten tasks is attributed to their capacity to control both inhibition and instigation. Kids in preschool need verbal waiting rooms, such as songs or instructions, to regulate their behavior and to apply inhibitory control (Johann & Karbach, 2020; Obradovic et al., 2019). In addition, adults must provide top-down approaches, in which the kids obey the teacher's instructions. Children use these strategies as a guide when they solve problems. Children demonstrate inhibitory control when they can remember directions, follow them, and refrain from acting in certain ways to accomplish a task (Johann & Karbach, 2020).

Working memory, the second aspect of executive function, enables people to remember and understand information while performing tasks and to retrieve information to aid in decision-making (Ahmed et al., 2022; Diamond, 2013; Zink et al., 2021). According to Zelazo (2020), this mental framework addresses storing information so that it can be applied. According to several academics, verbal memory and visual-spatial memory are the sources of information that the working memory uses to store information. Working memory is essential for reasoning and understanding new meanings; as a result, it stores important information that can be used correctly later on in task execution. The ability to retain mental information begins early and continues to grow after kindergarten, claim Ahmed et al. (2022). Children's ability to recall two or three things for extended periods is evidence of this. Friedman and Miyake (2017) go on to say that kids in preschool who work on a single task at a time as opposed to multitasking are better able to retain information. Working memory, which facilitates the easy storing and retrieval of information, encompasses mental representations during the preschool stage (Carretti et al., 2022). Working memory is put through more difficult tasks during the preschool phase, like updating and manipulating information (Carretti et al., 2022; Delage et al., 2022). Second, the attention and memory storage domains are more efficiently organized. Older preschoolers, for instance, group information based on distinct criteria, which helps them recognize and differentiate between the distinctive characteristics of various concepts. Songs and instructions help children remember concepts or procedures better (Delage et al., 2022; Miller, 2010). Accordingly, research suggests that working memory be strengthened enjoyably and engagingly.

VI. Subjective Wellbeing:

Subjective well-being remains a significant area of interest in psychological research, recognized for its complex and multifaceted nature. It encompasses elements such as life satisfaction, positive affect, and negative affect, each following distinct developmental patterns throughout an individual's lifespan. Recent studies affirm that social support and the fulfillment of basic needs are crucial predictors of Subjective well-being across various populations, emphasizing the profound influence of cultural and societal factors on (Diener, Lucas, et al., 2018; D. E. et al., n.d.; Steptoe et al., 2015). Moreover, the satisfaction of psychological needs, including autonomy, competence, and relatedness, remains essential for high levels of Subjective Wellbeing. The relationship between personal values and societal norms also significantly impacts an individual's Subjective Well-being, suggesting that congruence between these aspects can enhance well-being (Huta & Waterman, 2014). The ongoing research underscores the complexity of Subjective well-being and its reliance of individual and societal factors. (Abdullahi et al., 2020; Braun et al., 2017). An in-depth examination of Subjective well-being reveals various determinants that shape long-term well-being. Economic status, significant life events, and parenthood have been identified as influential factors in an individual's overall well-being, with cultural nuances further modulating these influences(Das et al., 2020; Steptoe et al., 2015; Yazdani & Siedlecki, 2021). For instance, financial security has been linked to higher Subjective well-being, while unemployment can negatively impact it (Abdullahi et al., 2020; Muhye & Fentahun, 2024; Wong & Yang, 2022). Life events such

as marriage and retirement also show a complex relationship with Subjective well-being, where the effects can vary greatly depending on the individual and their cultural background.

Notably, Subjective well-being has been linked to favorable health outcomes and robust social ties. Higher levels of Subjective well-being are associated with better physical health outcomes, such as lower rates of chronic disease and longer lifespan(Abdullahi et al., 2020; Das et al., 2020). Additionally, strong social networks have been shown to support higher Subjective well-being, providing social resources that contribute to an individual's well-being. These findings suggest that elevated levels of Subjective well-being can contribute to improved physical health and more substantial social networks(L. M. E. & L, n.d.; M. S. E. et al., n.d.; M. et al., n.d.; Wong & Yang, 2022). The evolving research on Subjective well-being not only sheds light on its contributing factors and benefits but also informs the development of interventions designed to enhance well-being. Such interventions, which may include mindfulness training, positive psychology exercises, and lifestyle modifications, are aimed at improving mental health and life quality(Kushlev et al., 2020; Zhao et al., 2021). These practices have been shown to effectively increase Subjective well-being by promoting positive emotions, engagement, relationships, meaning, and achievement(Sakuraya et al., 2020). Ongoing research continues to guide the creation of strategies aimed at reinforcing cognitive abilities and subjective well-being (Frontiers in Public Health, 2022).

These interventions underscore the pivotal role of Subjective well-being in comprehensive well-being. For instance, cognitive-behavioral therapies have been adapted to focus more on building positive emotions and strengths rather than solely on reducing negative symptoms(Das et al., 2020). Ongoing research continues to guide the creation of strategies aimed at reinforcing cognitive abilities and subjective well-being, with studies demonstrating that such interventions can lead to sustained improvements in Subjective well-being. The interplay between executive function and subjective well-being is a pivotal aspect of the academic and social adaptation of international students. Executive functions, which include inhibitory control, working memory, and cognitive flexibility, are essential for managing the complex demands of studying abroad. These cognitive processes enable students to prioritize tasks, control impulses, retain and manipulate information, and adapt to new educational systems and cultural environments (Rodríguez et al., 2022).

On the other hand, subjective well-being reflects the students' self-assessed quality of life, encompassing emotional responses, satisfaction with life domains, and overall life satisfaction. For international students, this may be influenced by their ability to form relationships, maintain health, and achieve academic success in a foreign context (Akhtaruzzaman et al., 2018). Research suggests that there is a protective relationship between strong executive functions and various facets of well-being. Students with robust executive functions tend to have happier relationships, healthier habits, and more academic success(Luerssen & Ayduk, 2017; Yazdani & Siedlecki, 2021). Moreover, the ability to focus attention and exercise inhibitory control has been associated with greater life satisfaction and fewer emotional or behavioral problems among students(Rodríguez et al., 2022). For international students, navigating a new country's academic expectations and social norms requires a high degree of self-regulation a core component of executive function. The challenges of adjusting to different teaching styles, language barriers, and social cues can significantly impact their subjective well-being. A study on international students in New Zealand found that academic performance and subjective well-being were closely linked(Akhtaruzzaman et al., 2018). Additionally, factors such as feeling safe and connected were crucial for their overall mental health(Corney et al., 2024).

Executive functions are closely tied to academic success. The ability to organize, plan, and execute tasks is crucial for meeting the demands of higher education. A study found that international students' academic performance was significantly related to their subjective well-being, suggesting that those who manage their academic responsibilities well tend to report higher levels of happiness(Akhtaruzzaman et al., 2018). The capacity for self-regulation, a key aspect of executive function, is also linked to mental health outcomes. Hope, optimism, and self-efficacy have been shown to have unique effects on subjective well-being and depressive symptoms. These traits enable students to maintain a positive outlook and effectively cope with the challenges of studying abroad(D'Souza et al., 2021). Adaptation to Change: The COVID-19 pandemic has highlighted the importance of adaptability, another component of executive function. A study comparing students' and recent graduates' subjective well-being before and after the pandemic underscores the role of cognitive flexibility in maintaining well- being during times of significant change(Donald & Jackson, 2022). Social Relationships: Executive functions facilitate better social interactions, which are vital for international students who must build new networks in a foreign environment. Students with stronger executive functions tend to have fewer problems in peer relationships, contributing to their overall satisfaction with life(Barry et al., 2017). Wellbeing Support: Recognizing the importance of student wellbeing, educational institutions are increasingly providing support services. These services aim to enhance students' executive functions and, consequently, their subjective wellbeing(Bucker et al., 2018; Cadime et al., 2016). Enhancing executive functions can lead to improved academic performance, better mental health, greater adaptability, and more

satisfying social relationships for international students. This comprehensive approach to supporting their cognitive and emotional needs can significantly contribute to their overall subjective well-being. The relationship between perceived executive function and subjective well-being among international students is complex but integral. Enhancing executive functions could potentially improve their adaptation process and increase their satisfaction with life while studying abroad.

The relationship between executive function and subjective well-being is multifaceted and particularly significant for international students, who must navigate the complexities of a new academic and cultural environment. Executive functions such as organization, planning, and task execution are integral to academic performance, which in turn is a key determinant of subjective well-being. Research indicates that international students who excel academically to satisfaction (Akhtaruzzaman et al., 2018; Rodríguez et al., 2022). Mental health is another critical aspect where executive functions play a role. Traits like hope, optimism, and self-efficacy, which are components of self-regulation, have been shown to positively impact subjective well-being and mitigate depressive symptoms. These traits empower students to maintain a positive outlook and effectively manage the stress associated with studying in a foreign country(Corney et al., 2024). The adaptability of students, especially in the face of unprecedented changes such as those brought about by the COVID-19 pandemic, is also linked to cognitive flexibility a core executive function. Studies have shown that students' ability to adjust to such changes is crucial for maintaining their subjective well-being during challenging times(Adler, 2016; Donald & Jackson, 2022).

Social relationships are essential for international students, and strong executive functions support better social interactions. Students with robust executive functions report fewer problems in peer relationships, which contributes significantly to their life satisfaction and overall subjective wellbeing(Barry et al., 2017). Educational institutions have recognized the importance of supporting student well-being and are increasingly offering services aimed at enhancing executive functions. These services are designed to address both cognitive and emotional needs, thereby improving students' academic experiences and their quality of life(Bucker et al., 2018; Cadime et al., 2016). The interrelation between executive function and subjective well-being is evident in the academic success, mental health outcomes, adaptability to change, and social relationships of international students. By focusing on strengthening executive functions, educational institutions can make a profound impact on the well-being of their international student body.

VII. Theoretical framework：

Transactional model: posits that executive function and subjective well-being influence bidirectionally over time. EF affects SWB in direct and indirect ways. While subjective can also promote EF by promoting a positive mood and effective stress management.

VIII. Methodology:

This part deals with the methodological considerations of the study. It begins with the research design of the study. This is followed by the presentation of data on the participants of the study in section two. The instruments and procedures are in section three. Finally, the methods of data analysis are presented. The study utilized a quantitative approach and a correlational design to investigate the relationship between executive functions and subjective well-being among international students. This approach allowed the researcher to gather numerical data and analyze it statistically to determine the extent of the association between these two variables. Surveys were administered through the WeChat campus international student group and FormOffice.com to collect the necessary data.

Participants: The participants in the study were international students studying at Northeast Normal University (NENU). Before their participation, they were informed about the nature and purpose of the study to ensure their understanding and consent. In terms of sample size, the study included 110 participants, with 61 males and 49 females. This sample size allows for a reasonable representation of the international student population at NENU.

Measurements: The Behavior Rating Inventory of Executive Function (BRIEF) was used as an instrument to assess the participants' executive functions. The BRIEF is a well-established questionnaire that measures different aspects of executive functioning, including working memory, inhibition, and cognitive flexibility. It is designed to be completed by parents, teachers, or individuals themselves, depending on the age group being assessed. There were 75 questions on the scale and the reliability was 0.978.

The subjective well-being of the participants was measured using the BBC Well- being Scale. This scale is a self-report measure that evaluates an individual's overall well-being and satisfaction with life. It includes items related to happiness, life satisfaction, and positive emotions. There are 24 questions on the scale and the reliability of the scale was 0.989. Participants were asked to rate their agreement with each item on a

scale, providing insights into their subjective well-being.

Methods of Data Analysis: descriptive statistics, including mean and standard deviation were used to examine the actual mean and standard deviation of scores of perceived executive function and subjective well-being. Next, correlational analysis was employed to conclude the relationship between executive functions and subjective well-being among international students. To analyze the collected data, the researchers utilized SPSS (Statistical Package for the Social Sciences), a widely used software program for statistical analysis. SPSS provides various tools and techniques to explore and interpret data, allowing the researchers to conclude the relationship between perceived executive functions and subjective well-being among international students.

IX. Results:

This part presents the results of the study in four sections. First, demographic information, descriptive statistics, correlation among variables, and independent sample tests of the Sex of respondents among the two variables are presented

Demographic information of the participants: The analysis is based on a sample size of 110 participants61 males and 49 females = 110). This is a moderately large sample, which provides a reasonable basis for the statistical analysis. Larger samples generally lead to more reliable and generalizable results.

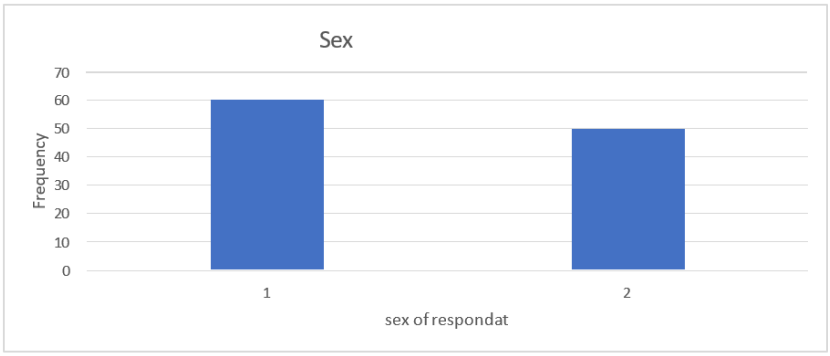

Table 1

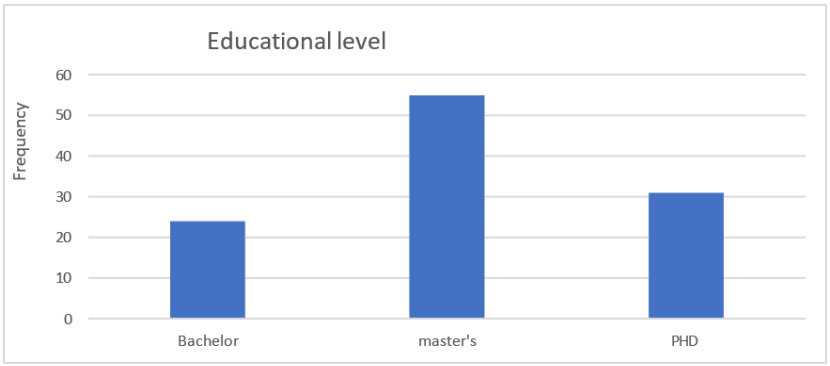

Table 2

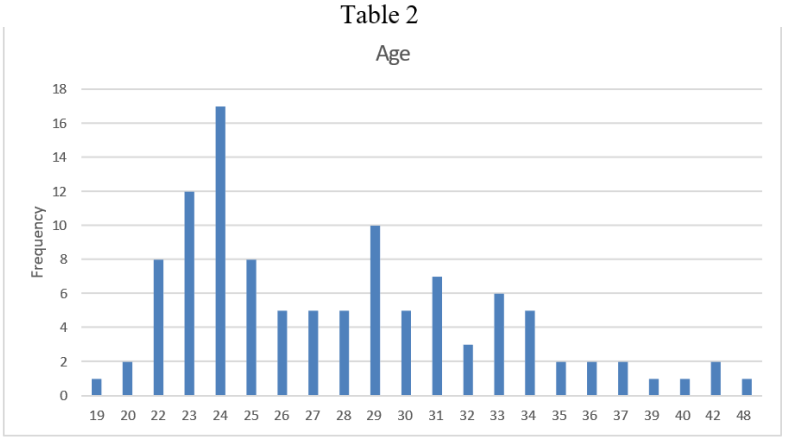

Table 3

Descriptive Statistics of the Study Variables: Descriptive statistics, including mean and standard deviation for the measures of perceived executive functions and subjective well-being variables, are reported in Table 1. It shows the Mean of 110 respondents for perceived executive function: The average value of the variable is 1.5788. Standard Deviation: The measure of the dispersion of the variable's values around the mean is 0.52594. The mean of 110 respondents for subjective well-being: The average value of the variable is 2.7697. Standard Deviation: The measure of the dispersion of the variable's values around the mean is 1.22218. The valid N (listwise) for both variables is 110, indicating no missing values for these variables in the dataset.

Descriptive statistics

	N	Mean	Std. Deviation
Perceived Executive function	110	1.5788	0.52594
Subjective well-being	110	2.7697	1.22218
Valid N(listwise)	110		

Interpretation of the Correlation Table: The table presented shows the correlation analysis between two variables: subjective well-being and perceived executive function. The analysis includes the Pearson correlation coefficient, and the sample size is (N)= 110. This analysis helps us understand the relationship between these two psychological concepts among the participants. The Pearson Correlation Coefficient between both variables is r = 0.262. This value suggests a positive relationship between the two variables. In other words, higher levels of subjective well-being are associated with better executive function.

Correlation table

Variables	1	2
Perceived executive function	-	
Subjective wellbeing	.262**	-

Interpretation of the independent Sample t-test table: Based on the table, there is no significant difference between the group of males and females at the Sig for both variables perceived executive function and subjective well-being at the (2- tailed) level. Perceived Executive Function: The Sig. (2-tailed) value is 0.230 (equal variances assumed), greater than 0.05. This indicates that there is no statistically significant difference in perceived executive function between males and females. Subjective Well-being: The Sig. (2-tailed) value is 0.913 (equal variances assumed) which is greater than 0.05. This indicates that there is no statistically significant difference in subjective well-being between males and females. Therefore, for both variables, there is no significant sex difference at the Sig. (2-tailed) level.

Independent Sample t-test

Variables	Sig. (2-tailed) level
Perceived executive function	0.230
Subjective well being	0.913

X. Conclusion:

The study found a moderate positive correlation (r = 0.262) between perceived executive function (EF) and subjective well-being (SWB) in the sample population. This finding aligns with and extends previous research indicating that EF plays a significant role in maintaining and enhancing SWB, particularly in middle and late adulthood. The correlation aligns with theories suggesting interconnectedness between both. It adds to the body of evidence supporting the existing literature. For practitioners, such as psychologists and educators, understanding this relationship could be valuable. study aimed at investigating subjective well-being might have additional benefits for executive function, and vice versa. For example, mindfulness and well-being programs might not only enhance happiness but also cognitive functions that are crucial for daily life and academic performance. In summary, the correlation analysis shows a statistically significant positive relationship between subjective well-being and executive function. This finding, based on a sample of 110 participants, highlights the potential interconnectedness of emotional and cognitive aspects of mental health. While the relationship is not strong, its significance suggests that interventions in one area could potentially benefit the other, warranting further research and practical exploration.

XI. Discussion:

The observed correlation between EF and SWB can be partially explained by the mediating role of a sense of control. Toh et al. (2020) found that a sense of control significantly mediated the relationship between EF and both life satisfaction and affective well-being. Our results support this finding, suggesting that better PEF may enhance an individual's perceived control over life circumstances, which in turn contributes to higher SWB (Toh et al. (2020) also reported that the mediation effects of a sense of control were more pronounced among older adults. While our study didn't directly examine age as a moderator, the moderate correlation we found suggests that EF could indeed be an increasingly valuable resource for maintaining SWB as people age. This underscores the importance of preserving and enhancing EF in later life as a means of supporting overall well-being. Pe et al. (2012) demonstrated that the ability to update positive stimuli in working memory was associated with higher levels of life satisfaction and affect balance. Our correlation between EF and SWB may reflect this relationship, suggesting that better EF, particularly in managing positive information, could contribute to maintaining and enhancing positive thoughts and emotions. Kaufman et al. (2021) found that EF measures consistently predicted well-being and resilience in older adults, even after accounting for depression symptoms. Our correlation aligns with these findings, indicating that stronger EF may contribute to greater resilience and overall well- being. Ortuño-Sierra et al. (2020) reported that adolescents with low personal well- being showed impairments across various neurocognitive domains, including executive functions. While our study focused on a different age international student, the correlation we found supports the link between neurocognitive performance, particularly EF, and subjective well-being across the lifespan. Given the significant positive correlation between PEF and SWB, our study aimed at enhancing EF could potentially improve overall well-being. This could be particularly beneficial for older adults, as suggested by the age-related findings in previous studies. In conclusion, our findings contribute to the growing body of evidence linking executive function to subjective well-being, highlighting the potential importance of cognitive factors in maintaining and enhancing quality of life across this population.

XII. Future Directions:

Longitudinal studies to establish causal relationships between PEF and SWB over time. Investigation of specific EF components (e.g., updating, inhibition, shifting) and their contributions to SWB. Development and testing of EF- focused interventions to enhance SWB, particularly in aging populations. Exploration of potential moderators (e.g., age, education, socioeconomic status) in the EF-SWB relationship. Integration of neuroimaging techniques to understand the neural underpinnings of the EF-SWB relationship.

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