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Types of Morning-Evening Personality and its Relationship with Self-Vitality and Procrastination Behavior among University Students

Dr. Yahya Mubark Suleiman Khatatbeh
Associate Professor in Psychological Counseling - Department of psychology
Imam Mohammad Ibn Saud Islamic University
Dr. El-Walid Bin Abdullah Fareh Miri
Assistant Professor of Psychology - Department of psychology
Imam Mohammad Ibn Saud Islamic University

Abstract

The present study has aimed at revealing the connection between the types of morning-evening personality and its relationship with the university students' self-vitality and procrastination. It has also aimed at finding out the differences in the morning-evening personality, self-vitality and procrastination as per the demographic variables (gender, age, academic average, academic specialization and physical illnesses). The sample of the study consisted of a number of 691 students (males and females). For achieving the objectives of the study, the following tools have been used: scale of morning-evening personality developed by Biggs (2015), Ryan & Fredrch's self-vitality scale (1997) and Kiser's procrastination scale (2020).

The result of the study indicated that the university students' dominating personality type is represented by the moderate type between the morning personality and the evening one, the average procrastination level and the high level of self-vitality. It was also found that there are differences in the levels of self-vitality and procrastination for females in comparison with males, for sick individuals in comparison with those suffered from illness in the past, for those whose ages range from 19 to 22 in comparison with other age groups, the less self-vitality of those in humanities specializations in comparison with other specializations. Moreover, those in forensic specializations were much tendentious to procrastination than the students in other specializations. As per the academic average variable, the differences in self-vitality were in favor of those who got (Very Good). Such differences were in favor of those who got (Good) as per the procrastination variable. Besides, the differences were in favor of those who belong to the evening personality in comparison with other groups concerning the variables of self-vitality and procrastination. The results made it clear that the self-vitality has a statistical significant role in explicating the types of personality (13%), while procrastination recorded a difference of 12 percent.

***Keywords**: The morning-evening personality, self-vitality, procrastination behavior, students of Imam Muhammad ibn Saud Islamic University.*

Introduction

Individuals differ in their basic biological rhythms and sleep timing. Some are morning-oriented, preferring it to performing intellectual and physical activities. They go to bed early. On the other hand, evening-oriented individuals feel better in the late afternoon or evening hours, preferring later bedtimes as a kind of continuity (Natale & Cicogna, 2002).

The central biological clock in the brain is characterized by a rhythm of approximately (24) hours as one of the main determinants of the daily rhythm of the individual's rest and activity. These rhythms physiologically coordinate certain behaviors such as the sleep/wake cycle, hormone secretion, self-awareness and performance.

The cognitive performance is shown by changes in the biological clock throughout the day. Moreover, the individuals differ in their timing during the day when they are most able to perform specific tasks and even when they prefer to start sleeping. These differences are identified by their preferred organization of sleep and daytime activities in a chronological pattern. This is so due to the fact that the delayed temporal pattern has been associated with adverse mental and physical consequences. These naturally occurring differences between individuals concerning the preferred timing of sleep/wake are known as chronological pattern. It changes through age as adolescents shift their daytime preferences from morning to evening. As a result, time patterns are forced to adapt their activities to social reality. This can cause difficulties in participating in work, school and other social activities, and affect both psychological and physical health (Papatsimpa et al., 2021).

Morning-evening sleep pattern is regarded as a personality-like trait in which people are categorized as per their preferences during the day, wake/sleep times, or mid-sleep on leisure days. Moreover, morning-oriented people reach the peak of their performance in the morning, while evening-oriented people perform best in late hours of the daytime. The temporal pattern varies in terms of: sleep duration, sleep time and wake up time (Staller et al., 2021).The morning and evening personality pattern changes during life. That is, children are often oriented towards the morning pattern, while adolescents (12-14) years prefer the evening pattern. Thus, it seems that the shift towards evening is related to the person's development during puberty. By the end of adolescence, a shift to morning pattern occurs (Roenneberg et al., 2004).

The degree to which people prefer to organize their activity and sleep patterns in the morning or evening is connected with the daily routine and mood. Moreover, the effects of the morning or evening personality pattern are reflected on the student and the tasks he must accomplish. The tasks and demands that he has to do are increased. Besides, the behavioral and emotional problems become severe and critical, while the family and social demands are increased.

One of the most prominent **characteristics** of the morning-evening personality type, as one of the typical examples of the morning person, is the person who gets up naturally at six in the morning, goes for a run, has a shower, eats breakfast, and gets ready for a productive day at work by nine in the morning. These people are more productive, less procrastinating, having better mental and physical health which is the result of their daily exercise. They have higher conscientiousness and lower openness. Besides, they more disciplined and less likely to seek excitement (Lenneis etal., 2021). He who does not have to set an alarm is a happy and cheerful person with his colleagues in the morning. He feels like wasting his day if he stayed in bed until nine in the morning. Such a person does not delay the morning alarm. Instead, he sleeps early, takes care of breakfast, feels calm in the morning, and gets enough sleep (Reinke, Özbay, Dieperink &Tulleken 2015).

On the other hand, an evening-type of person struggles to get up in the morning and feels more productive in the evening. He feels happy when starting to watch a movie after 9 pm, tries to get everything done in the evening, eats dinner after 8 pm and finds it difficult to sleep early. Couples with an evening personality often differ from those with a morning personality concerning their duties and tasks. Family disputes commonly happen between them, and they drink coffee heavily. Besides, they feel disturbed by the closing of shops at 10 pm, and suffer from sleepiness during the day. Their high tendency to sleep during the day is a real concern (Reinke, Özbay, Dieperink &Tulleken 2015). Personality is often viewed in terms of the Big Five; that is, neuroticism, extraversion, openness, agreeableness and conscientiousness, which can then be broken down into other aspects. Linnes and Rafah's study (Lenneis et al., 2021) found a connection between certain relationships of extraversion and morning personality traits, and the effect of age, gender, education, season, and conscience on the temporal pattern of individuals. This means that many physiological processes have a clear diurnal rhythm which is innate in humans, affecting many psychological processes such as positive influence, well-being and many other processes. Therefore, sleeping behaviors such as (sleep timing, which is the chronological pattern, duration of sleep and nightmares) are related to psychological factors, especially personality building. In their study which was conducted on a sample of (847) students enrolled in psychology, (Jovanovski & Bassili, 2007) made it clear that students with the evening mode are more positive about lectures following the electronic method (remotely) and they tend to watch lectures via screens, in contrast to students with morning personalities.

When there are sleep disorders, especially with regard to the difference in time preferences related to the morning-evening patterns, students suffer from several problems, including the following: 1. Social problems related to interaction and social cognition. 2. Economic problems related to occupational stability.3. Health problems related to the physiological aspect, 4. Psychological problems whose effects are reflected in all aspects of the personality such as: depression, stress, anxiety, mood disorders, feelings of inferiority, excessive remorse, self-blame,

psychological pressure, family problems, psychological stress, and weakness of self-vitality (Subjective Vitality). This leads to a decrease in the level of their activity, and it is reflected in their daily behaviors and skills, their level of well-being and positivity, hence causing a number of daily problems and difficulties.

According to Desi and Ryan's theory of self-determination (1985), as it is referred to in Ryan and Frederick (1997), subjective vitality is "an entity full of energy, enthusiasm, life and without exhaustion and fatigue; a complete experience of life and energy". The study proved that the low level of subjective vitality leads to irritability, tiredness, boredom and inability to complete tasks and daily activities. On the other hand, a high level of subjective vitality is an entity full of positive psychological energy. A lively and cheerful person is alert, rejuvenated and full of life and energy.

According to this theory, energy plays a major role in subjective vitality, and it is necessary to have an optimal level of positive psychological energy to maintain well-being and subjective vitality as a psychogenic internal energy represented by feelings of joy and positive energy (Greenglass, 2006). The theory of self-determination focuses on three basic needs that facilitate the growth and development of the individual: 1. Efficiency which refers to the individual's need to conduct his behavior effectively in order to feel as if he is doing a good job. 2. Independence which means the need to experience behavior as voluntary, stemming from within, so that the individual feels that he has control over what he is doing. 3. Attachment which refers to the need to interact and build a relationship with others and experience interest in them, and these needs reinforce the individual's internal motives as motivators of human behavior (Ryan & Deci 2000).

According to this theory, subjective vitality is defined as “energy that is perceived as emanating from the self. It is a positive feeling of owning the energy available to the self (Ryan& Frederick, 1997). Self vitality is connected with emotional and social well-being, psychological well-being and life satisfaction. Its essence lies in the subjective feelings and potential energy of the individual, achieving happiness, self-satisfaction and hope, while the failure to achieve self-vitality negatively affects individuals and causes a number of mental disorders and diseases such as depression, anxiety, low self-productivity, feelings of frustration and hesitation, which result in feelings of despair inferiority (Deci & Ryan 2000).

Thus, subjective vitality can be defined as “the state of feeling alive and having positive feelings whose effects are reflected in psychological and physical health. The source of these feelings is the individual himself, his desire for activity, positive innovation and the feeling of interacting with others with a full energy.” Therefore, the subjective vitality is a subjective experience determined by the person who experiences it. It is associated with independence and self-realization, specifically to the degree to which one is free of conflict, free from the burden of external controls and feelings of energy such as tension, anxiety, or stress which negatively affect the sense of vitality. This physical dimension is most evident when basic bodily functions are robust and able to exercise it effectively

(Ryan & Frederick, 1997). Moreover, the levels of subjective vitality depend on both psychological factors (for example, the extent to which individuals are sufficiently independent, competent, and connected with their social environments) and physical performance (Ryan& Deci, 2008).

Subjective vitality affects the individual's correlation with mental health, life satisfaction, and optimistic performance (Ryan & Deci, 2001). It stems from the concept of subjective vital well-being as one of its aspects. It is related to performance and obtaining an optimistic operating experience. The feeling of psychological comfort includes three aspects: happiness, purpose and vitality, which are created to motivate individuals to maintain their vitality and achieve insight in them, their lives and their environment (Kaplan, 1995).

One of the most important problems that may be faced by an individual who suffers from weakness in subjective vitality is a low level of performance and achievement, a high level of procrastination, and procrastination behavior, especially what the students practice during university study periods, despite knowing that there will be negative consequences to doing so. It is a common human experience that involves delaying daily chores or even postponing high-profile tasks such as attending an appointment, submitting a job report, an academic assignment, or bringing up a stressful issue. Although it is usually viewed as a negative trait due to its crippling effect on one's productivity, it is often associated with depression, low self-esteem, guilt and inadequacy (Karen et al., 2016).

Procrastination involves unnecessary and unwanted delay, whether it is a decision, execution, or failure to meet deadlines. The main characteristic of procrastination is the awareness that the action will be made worse by the delay. It is irrational and inappropriate. People who procrastinate usually experience higher levels of stress and lower levels of well-being. The different definitions of procrastination focus on some basic aspects of the phenomenon, some of which are related to delaying action:

1. Procrastination: It involves delaying an explicit or hidden act that is necessary or of personal importance, when it was intended to begin or end.
2. The delay itself: It is voluntary and does not impose itself on oneself because of external matters, unnecessary or irrational, in the sense that it is carried out despite the individual's awareness of its potential negative consequences. It is associated with personal discomfort or even negative consequences (Svartdal et al., 2016).

The prevalence of this behavior shows that (20%) of adults in the United States are chronic procrastinators. It is "a form of self-regulation failure characterized by irrational delaying of tasks despite potential negative consequences" (Prem et al., 2018).

The reasons that individuals practice this behavior are the idea that they should feel inspired or motivated to work on their task at a certain moment. Besides, procrastination spreads among students, according to the results of Ferrari's study, 2010, which reflected that (80%-95%) of university students procrastinate on a regular basis, especially when it comes to completing

assignments and coursework. The causes of procrastination are attributed to some major cognitive distortions such as overestimating the amount of time they have left to perform tasks, and overestimating their enthusiasm in the future, the lack of time that some activities may take to complete, the wrong assumption that they need to be in the right frame of mind to work on a project, poor motivation and self-vitality, sleep disturbances, constant preoccupation, forgetfulness, the need for enough time to think about some tasks, difficulty of tasks, lack of clarity and the nature of the task (Steel, 2007).

Non-procrastinators, on the other hand, focus on the task that needs to be done. They have a stronger personal identity, and tend to have a high degree of the personality trait, known as conscientiousness, which is one of the broad dispositions defined by the Big Five theory of personality. This includes self-discipline, perseverance and personal responsibility, while procrastinators suffer from levels of stress and pressure since they have a burden in their social relationships, suffer from difficulties at work, and some financial fines as a result of their procrastination, and they are often punished (Ferrari, 2010).

Theoretical explanations concerning the emergence of procrastination differ concerning several points of view; from the perspective of differential psychology, it is a trait that is related to other personality variables, from the perspective of motivational psychology, procrastination is a motivational and/or volitional deficit related to other motivational and self-regulation variables, from the perspective of clinical psychology, it is a phenomenon which is clinically relevant, associated with anxiety, depression, and stress, and from a situational perspective, it is evoked by certain situational features such as task difficulty (Klingsieck, 2013).

Many studies have dealt with variables that link the effect of the morning-evening personality pattern or its relationship with self-vitality and procrastination in different environments and multiple social groups. Staller and his classmates (2021) have conducted a study on the academic self-regulation, temporal pattern, and personality of university students during the distance learning phase due to the COVID-19 pandemic. The study sample consisted of (228) students enrolled in German universities. The results of the study indicated that the students with morning personalities are distinguished by their conscientiousness and openness, while those who suffer from a low level of nervousness deal with issues with higher efficiency and their self-vitality is higher. They have higher self-motivation than other types of personalities. The results showed that students in general need a variety of support based on their temporal pattern and personality during the continuation of digital learning.

Al-Obaidi (2020) conducted a study which aimed at identifying the subjective vitality. In addition to recognizing the differences in the subjective vitality between students as per the gender variable (male - female), the study stage (first - fourth), and the academic specialization (scientific - human), the study sample consisted of (120) university students. The results of the study indicated

that university students enjoy a high degree of self-vitality, and there are differences in self-vitality according to the gender variable. The differences are in favor of males, and there are no differences in self-vitality according to the variable of academic specialization or the variable of the study stage.

Another study in this connection was conducted by Al-Masry (2020). It aimed to reveal the differences which are attributable to some demographic variables (school stage - occupational status - marital status) in the subjective vitality of graduate students. It also aimed to reveal the dynamic characteristics of the peripheral cases (high and low subjective vitality). The study sample consisted of (140) male and female students, whose ages ranged between (22-37 years), with a mean of (28,79) and a standard deviation of (3,409). The results of the study indicated that there were differences attributable to the academic stage in the subjective vitality of the Ph.D. group. There were also differences in the tendency of the students who worked due to the functional status. Besides, there were no differences due to the social status. The results of the clinical study proved the existence of distinct dynamic characteristics of high and low self vitality.

In order to identify the level of biorhythm and compare it with the morning and evening personality patterns of university students, Saleh, Burhan and Al-Zahawi (2020) conducted a study on (36) students from Karmian University, Faculty of Physical Education and Sports Sciences. The results of the study indicated that the vital rhythm of the morning study students is high compared to the evening study students. It was also found that there were no differences between them since most of them were of an irregular pattern.

Another study was conducted by Arbinaga and colleagues (2019). It aimed to determine the subjective sleep quality, temporal pattern, and frequency of nightmares in college students, depending on whether they were physically active or inactive. The study sample included (855) male and female students. The results showed a decrease in the quality of sleeping among the students, their tendency to the evening pattern, and their suffering from recurring nightmares and disturbing dreams.

Exelmans and colleagues (2019) conducted a study on the effect of electronic media on the sleep quality, procrastination behavior, and well-being. The study sample consisted of (821) individuals who were employed to predict the effect of electronic media on procrastination behavior. Moreover, a number of 548 individuals were employed to investigate the relationship between procrastination and sleep quality. The results of the study indicated that people with an evening personality have a sense of the level of subjective well-being in the evening, and they are more procrastinating than others. Their procrastination behavior is associated with sleep quality, time, and efficiency, and they are more predisposed to failure in self-regulation.

For revealing the relationship between some psychological characteristics (self-efficacy, self-control), procrastination and temporal personality pattern (morning-evening), Przepiórka, Błachnio & Siu (2019) conducted a study with a sample of (315) young people aged (18-27) years old. Its results

indicated a decrease in self-efficacy, self-control, a high level of procrastination behavior among those with the evening personality, and a positive relationship between procrastination behavior and sleep problems. The procrastination behavior contributed positively to sleep problems. The results showed the negative impact of the time patterns used among young people (morning-evening) on the procrastination behavior.

The aim of the qualitative analytical study conducted by Randler & Engelke 2019) was to assess the differences between the sexes in the time pattern (morning-evening). The study sample consisted of (164) individuals that were analyzed. The results of the analysis showed that males are more orientated towards the evening pattern. It was also found that the chronological age has a great effect on the morning and evening personality patterns, and that females are more orientated to the morning personality especially the younger group compared to older females.

Jankowski & Ciarkowska (2008) conducted a study to examine the diurnal variation in both active arousal and tense arousal depending on the variable of morning and evening personality style. The study sample consisted of (31) Polish students and analyzed their answer on the sleep pattern preference scale. The results indicated that the participants and the evening type had a high level of tense arousal, and a lower level of soft or pleasant tone compared to the morning type, while the morning type showed a high level of active arousal.

Diaz-Morales, Ferrari & Cohen (2008) conducted a study on the frequency and forms of procrastination behavior (avoidance, hesitation), morning and evening personality pattern and their relationship with later lifestyles. The number of study members (509) participants. The results of the study showed a negative relationship between avoiding procrastination and the morning personality type. There were also differences in frequency and avoidance of procrastination, as the avoidance procrastination led to a decrease in the future trend. The study conducted by Digdon & Howell (2008) aimed to reveal the relationship between the evening pattern, self-regulation, self-control and procrastination among university students. The study sample consisted of (308) students. The results of the study indicated that there is a negative relationship between the study variables. The age variable explained (20%) of the variance in self-regulation and self-control, while the procrastination variable explained (33%) of the variance in the evening pattern with predictive variables.

It has become clear, through the review of previous studies, that they varied in their presentation of psychological variables, methods of measuring the morning and evening personality patterns, the diversity of the categories that they dealt with, and the places in which they were applied. The current study, on the other hand, focuses on the basic variables represented in the morning and evening personality patterns and their relationship with self-vitality and procrastination behavior among university students. The previous studies were similar with this study concerning the methodology and the target group of university students and adolescents in particular. But what distinguish the current study are its specific objectives on the target group, the codified tools in its

society, and its direct presentation of its goals and results, all of which dealt with the study variables directly.

The Problem of the Study and its Questions:

Researchers are concerned with the field of sleep/wake patterns and their connection with biological, psychological and behavioral variables by studying individual differences, daily preferences, sleep/wake patterns and morning or evening wakefulness among individuals. They are also concerned with the extent to which this pattern of personality is reflected in the individual's behavior and daily practices, his ability to complete his daily tasks and complete skills and duties in time. In short, they are concerned with the level of positive interaction, sense of activity and positive interaction with others. The results of studies that examined the time preference of individuals in general, and university students and adolescents in particular, have varied in terms of sleep patterns among individuals. In this context, the population statistics in New Zealand indicated that a percentage of (49.8%) prefer the morning pattern, in contrast with the percent of (51.2%) who prefer evening pattern (Paine et al., 2006).

It is agreed upon that the evening personality has negative effects on the individual and his life in general. And it turns out that procrastination behavior is greater in the nature of the tasks that the student considers that they lack the skills required to complete the task in a specific time. It may be that (65%) of the students want to reduce their procrastination behavior when writing scientific papers and completing university requirements. The study indicated that (62 %) expressed their desire to do so, especially during exam times, while (55%) of them showed their desire to overcome procrastination in order to be able to read and complete the weekly tasks (Milgram et al., 1988). Researches also show that (15% - 20%) of the general population procrastinates chronically, especially in an academic context, with (80% - 95%) of university students reporting that they have engaged in procrastination at least once, and (46%) of students frequently procrastinate in academic activities. The students' increasing practice of this behavior leads to negative mental health consequences such as anxiety and discomfort due to the passage of time while tasks remain incomplete. It also leads to perceptions of inefficiency as well as unpleasant feelings such as anxiety and guilt. These negative emotions may impair students' learning and academic performance (Peixoto et al., 2021). They negatively affect their self-vitality, well-being, participation, and excitement, physical and psychological activity which are reflected in their daily tasks.

The problem of the present study emerged from the reality of academic work, and the psychological counseling that is received periodically from students. Negative repercussions of Covid-19 pandemic on students and e-learning were observed. This helped to increase the rate of evening preferences and the decrease of morning preferences among students, especially after taking the pandemic-related vaccinations. This contributed to the high level of students' procrastination behavior in completing tasks and a decline in their personal life and activities compared to the normal

situation (before the pandemic), when students used attend lectures at the university's premises, practice their activities and hobbies directly, and interact in academic and social aspects with a high level of activity, excitement, self-dynamism, and constructive positive energy. Accordingly, the study problem focused on answering the following questions:

1. What is the level of prevalence of morning-evening personality patterns, subjective vitality, and procrastination behavior among university students?
2. Are there statistically significant differences at the significance level ($\alpha \leq 0.05$) between subjective vitality and procrastination behavior according to a number of demographic variables (personality patterns "morning, evening", gender, age, academic average, specialization)?
3. What is the possibility of predicting the subjective vitality and procrastination behavior through personality patterns (morning-evening) among university students?

Objectives of the Study

- Identifying the morning-evening personality patterns prevalent among university students.
- Identifying the differences in the morning-evening personality patterns, subjective vitality, and procrastination behavior according to a number of demographic variables (morning and evening personality patterns, gender, age, academic rate, specialization).
- Determining the relative contribution to predicting the subjective vitality and procrastination behavior through personality patterns (morning-evening) among university students.

The Significance of the Study

The importance of the study is divided into two parts; theoretical and practical. In addition to the importance of its population; the university students, it has an active role in achieving psychological and social adjustment. The youth period is a distinct and separate stage from all stages of an individual's life, during which he feels the first moment of independence and a launch in life. During this period, maturity is completed and the basic objectives are achieved. The research in this field is considered a scientific addition to the lack of studies that have been addressed and researched in detail, and it is considered a starting point for other studies on different categories and with a diverse methodology.

In terms of the applied part, the results of the study indicated the importance of subjective vitality and its relationship to other demographic and psychological variables such as personality patterns (morning - evening) and procrastination behavior.

The study also provided modern, translated and codified tools; namely, the measure of morning and evening personality patterns, the measure of procrastination behavior, and the measure of subjective vitality. It found results and outputs which are helpful to understand the mental health of the individual. It cares about academic procedures and practices to help students overcome the practice of procrastination behavior and accomplish tasks periodically, raise the level of self-vitality and sharpen the students' determination to achieve what is required of them.

Delimitation of the study

The present study is limited to a sample of students of Imam Muhammad bin Saud Islamic University in the city of Riyadh who were selected by cluster random method, during the second semester of the academic year 1441/1442 AH. This makes the generalization of the results limited to this group.

Procedural definitions of concepts and terms:

Morning and Evening Personality Pattern: The morning-evening personality pattern is defined as an individual trait that refers to sleep/wake behavior (preferred bedtimes and wake-up times), preferred times for peak cognitive performance, physical and psychological aspects. It is a term that refers to a preference for certain sleep and wake times (Randler et al., 2017). The morning and evening personality pattern is measured by the degree to which the respondent obtains on the scale used in the current study.

Subjective vitality: (Ryan & Frederick, 1997) defined it as "a state of positive feeling of focus, alertness, effectiveness, energy, vigor and enthusiasm." It is defined procedurally as "the potential energy, enthusiasm, positive motivation, a sense of ability and strength, and positive activity." It is measured by the degree obtained by the respondent on the scale used in the current study.

Procrastination: It means postponing works and tasks to a later time. The individual may resort to procrastination to escape the anxiety that accompanies the beginning or completion of tasks, or what accompanies making decisions. For the purposes of judging it as a procrastinating behavior, three criteria must be met: the procrastinating behavior has counterproductive results, the procrastination behavior is unnecessary in the sense that there is no goal in it, and that it results in not completing tasks, and not making decisions on time. It is measured by the degree obtained by the respondent on the scale used in the current study.

Methodology and Procedures of the Study:

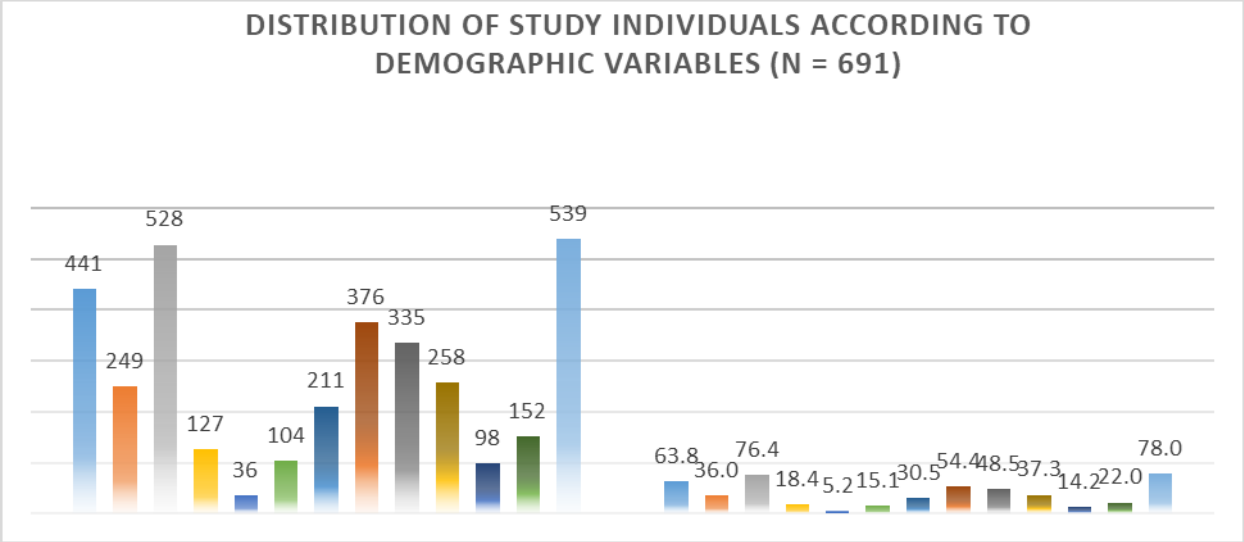
Methodology of the Study: To achieve the objectives of the study, the descriptive-analysis method was used to reveal the relationship between the three study variables, and compare them according to a number of demographic variables.

Study population and sample:

The study population consisted of all students enrolled in Imam Muhammad bin Saud Islamic University in the summer semester of the academic year 2020-2021, and all of them were undergraduate students of both sexes. The study sample consisted of (691) undergraduate students who are enrolled in a number of university faculties, which are: (Sharia colleges, humanities colleges, and scientific colleges). The study tools were distributed to the target group in a cluster random manner, through a (Google drive) link which was created for this purpose. The answer to the study tools was conditioned by the student's consent and desire to participate, and not to take any of the

drugs that cause drowsiness or sleep during the period of conducting the study.Answering was in the manner of the subjective report on all the study variables during the last month.

Table (1) Distribution of the study sample according to demographic variables (gender, age, specialization, rate, suffering from diseases) (n = 691)



	Sex	441	63.8
	Sex	249	36.0
	Age	528	76.4
	Age	127	18.4
	Age	36	5.2
	Specialization	104	15.1
	Specialization	211	30.5
	Specialization	376	54.4
	Academic average	335	48.5
	Academic average	258	37.3
	Academic average	98	14.2
	Do you suffer from illness?	152	22.0
	Do you suffer from illness?	539	78.0

Measures of Study

First: The Morning-Evening Personality Type Scale: To achieve the objectives of the study, the Morning-Evening Personality Style Scale, which was translated by Biggs (2015), prepared by Terman, Rifkin, Jacobs, White, Horn, and Ostberg (1976) was used. The scale consists of (19) items.

Points are collected for the answered paragraphs, as they range between (16-86) degrees. Scores from (1-41) indicate that the personality is evening, while scores from (42-59) reflect that the personality is average between morning and evening. Moreover, (59) degrees and above refers to the morning personality.

In detail, the score from (16-30) indicates that it is specific to the evening personality, from (31-41) is moderate in the evening, while (42-58) is a medium degree between the morning and evening patterns, (59-69)moderate morning personality,while (70-86) is defined as having a morning personality. The respondent may not be able to answer some questions if he works on shifts or night and day shifts.

Degree	70-88	59-69	42-58	31-41	16-30
Sleep Time	900-9:30	9:30-12:45	10:45-12:00	12:45- 2:00	2:00-3:00
Wake Time	4:00-5:00	5:6:30	6:30-8:30	8:30-10:00	10:00-11:30

Second: The measure of subjective vitality:

The subjective vitality scale, prepared by Ryan and Fredrch (97), was translated. It consisted of (7) items. It is a self-report which is used to measure positive feelings, feelings of vitality and energy, and it was employed on different samples and categories. The answer options on the scale are represented by seven alternatives (never applicable, not applicable, sometimes not applicable, unsure, sometimes applicable, applicable, fully applicable). For the purposes of correction, options are given (1, 2, 3, 4, 5, 6, 7) respectively. Statement number (2) is negative. The rest of the phrases are positive. The scale phrases have been translated from English into Arabic, and the translation has been re-translated from Arabic into English.

Third: The measure of procrastination behavior:

To achieve the objectives of the study, the procrastination behavior scale, developed by Kiser (Kiser, 2020), was translated and applied on the students of the Department of Psychology at Fresno University. After looking at the measures related to procrastination behavior such as Rozental, Solomon, Lee, Tuckman, Steel, Rosentel and others (Rozental, 2014 Steel, 2010; Tuckman, 1991; Lay, 1986; Solomon, & Rothblum, 1984), and after the factor analysis of the aforementioned tools was conducted, the scale was shaped in its current form, which consisted of (12) items, and prepared according to the five-point Likert scale. The tool's authors verified its validity and stability, which reached the level of (92), and the items of the scale are answered according to seven alternatives: (never apply, do not apply, sometimes do not apply, not sure, apply sometimes, apply, apply completely) and for the purposes of correction, options are given (1, 2, 3, 4, 5, 6, 7) respectively.

For the purpose of the present study, the tools were translated by the researchers into Arabic for proportionality and the study category. The psychometric properties of the study tools were

checked by extracting the apparent validity of the three study scales (morning-evening personality type, subjective vitality scale, procrastination behavior scale) and presenting them in their first draft to a number of the specialized persons who hold doctorate degrees in counseling, psychological and educational measurement, and also to specialists in languages and translation. Their number is (n = 10) university professors and psychologists. They were asked to express their opinions on these paragraphs in terms of their relevance to the concept of the scale and the nature of the target group, the objectives of the study, and to make the modifications they see fit, to add or reject some paragraphs if they are duplicated. The percentage of agreement on the validity of the scale's paragraphs reached the level of (90%), with the recommendation to edit the language of some paragraphs. Their number was (65) university students, while the correlation coefficient of the paragraphs was calculated with the total score of the tool as it is shown in Table (2).

Table (2) shows the correlation coefficients of the paragraphs with the dimension and the total score (morning-evening personality type, subjective vitality scale, procrastination behavior scale) (n = 65)

Types of personality (morning – evening)		Self-vitality		Procrastination	
1.	.400**	1.	.313**	.1	.295**
2.	.409**	2.	.249*	2.	.344**
3.	.263**	3.	.323**	3.	.371**
4.	.267	4.	.364**	4.	.368**
5.	.356*	5.	.334**	5.	.363**
6.	.288**	6.	.288**	6.	.329**
7.	.252**	7.	.310**	7.	.332**
8.	.412**			8.	.395**
9.	.346**			9.	.362**
10.	.271**			10.	.324**
11.	.283**			11.	.335**
12.	.294*			12.	.289**
13.	.432**				
14.	.278*				
15.	.218**				
16.	.389**				
17.	.317**				
18.	.289**				
19.	.252**				

It is clear from Table (2) that the values of the paragraph correlation coefficients with the total score were statistically significant at the significance level of (0.05) or less, and no paragraph was deleted from them. This indicates the appropriateness of the three tools and their appropriate degree of validity for the purposes of the study. The stability of the study tool was also calculated. Two methods were used; the Alpha-Cronbach method, and the stability of the half-segmentation, as it is shown in the following table:

Table (3) shows the values of Alpha- Cronbach and half-segmentation stability coefficients according to the three study tools (morning-evening personality type, subjective vitality scale, procrastination behavior scale) (n = 65)

Scale	No. of Paragraphs	Alpha-Cronbach	Half-segmentation stability
Personality	19	.69	.77
Self-Vitality	7	.67	72.
Procrastination	12	.62	.75

It is obvious from Table (3) that the values of the stability coefficients are suitable for the tool for the purpose of the present study.

Statistical Data Processing

To achieve the objectives of the study in identifying the relationship between the two personality types (morning-evening) as well as both subjective vitality and procrastination, the arithmetic means and standard deviations were employed. Moreover, to find out the significance of the differences between the means, multiple analyses of variance (MANOVA) and (T.Test) were used. Linear regression (Enter) analysis of the dependent variable on the independent variables, to determine the most important and contributory variables to the variance of the dependent variable, and follow-up tests were used to find out the direction of the differences (Scheffe).

Study Results:

Results related to the first hypothesis, which states that "the levels of the morning-evening personality pattern, subjective vitality, and procrastination behavior prevalent among university students vary." Arithmetic averages and standard deviations were calculated as in Table (4).

Table (4) Arithmetic averages and standard deviations of the study variables (morning-evening personality type), subjective vitality, procrastination behavior (n = 691)

Variable	**Standard Deviation**	**Arithmetic Mean**
Personality (morning – evening)	7.19546	48.1346
Self-Vitality	7.23259	43.4182

Procrastination	14.67050	43.4197

It is obviously noticed in Table (4) that the arithmetic mean of the personality pattern prevailing among university students reached the level of (48.13), which means that it is a moderate pattern between the morning and evening pattern. This explains the variance of the study sample members and their differences according to a number of variables, including gender, age, specialization, and academic average. The arithmetic mean of subjective vitality was (43.41) which is a high degree, while the arithmetic mean of the procrastination behavior variable reached (43.41), signifying a moderate degree. This logical result can be explained by the moderation of the distribution, and the fact that the study members are adolescents and university students who are characterized by a high degree of excitement, activity and a sense of personal energy. This life state brings a sense that one's actions have meaning and purpose. These findings are consistent with those of Al-Obaidi (2020) and Exelmans et al. (Exelmans et al., 2019).

The results related to the second hypothesis:

To verify the second hypothesis of the study, which states that "there are differences in: subjective vitality, procrastination behavior according to a number of demographic variables (personality pattern, morning, evening, gender, age, academic average, specialization)?", arithmetic averages and standard deviations were calculated for each of subjective vitality and procrastination behavior, depending on a number of variables. Table (5) shows this.

Table (5): Arithmetic averages and standard deviations of subjective vitality, procrastination behavior according to a number of demographic variables (personality type, morning, evening, gender, age, academic rate, specialization)

Variable	Category	Total level of self-vitality			Total level of procrastination		
		Arithmetic Mean	Number	Standard Deviation	Arithmetic Mean	Number	Standard Deviation
Sex	Males	30.7392	441	10.18611	40.5420	441	15.74408
	Females	35.9598	249	8.64105	45.3775	249	13.36801
	Total	32.6064	691	9.97409	42.3285	691	15.12884
Age	19-22	32.6894	528	10.12794	41.8523	528	14.86859
	23-25	32.1890	127	7.55166	42.5118	127	14.71360
	Older than 25	32.8611	36	14.51335	48.6667	36	18.95408
	Total	32.6064	691	9.97409	42.3285	691	15.12884
Specialization	Medical Sciences	29.9038	104	18.19662	34.8558	104	19.16075

	Forensic Sciences	33.8009	211	8.17244	43.3460	211	13.69980
	Humanities	32.6835	376	7.20173	43.8245	376	14.03162
	Total	32.6064	691	9.97409	42.3285	691	15.12884
Average	Excellent	32.1134	335	8.36976	40.1224	335	14.14764
	Very Good	33.6008	258	11.69420	42.2558	258	14.67403
	Good	31.6735	98	9.98842	50.0612	98	17.06435
	Total	32.6064	691	9.97409	42.3285	691	15.12884
Do you suffer from illness	Yes	32.3224	152	9.06387	44.3750	152	15.10573
	No	32.6865	539	10.22262	41.7514	539	15.09922
	Total	32.6064	691	9.97409	42.3285	691	15.12884
Residence	With family	32.6121	647	9.73485	42.3586	647	14.94235
	With Friends	35.7273	11	13.98636	32.6364	11	16.62091
	Other	31.4545	33	12.88917	44.9697	33	17.38082
	Total	32.6064	691	9.97409	42.3285	691	15.12884
Personality (Morning-Evening)	Evening Personality	40.8000	295	14.18742	32.3898	295	7.54537
	Moderate Evening Personality	45.9773	44	10.79511	34.4773	44	8.54669
	Moderate morning and evening Personality	44.8659	82	15.37736	31.9390	82	7.16188
	Moderate Morning Personality	47.8421	57	14.99141	34.8947	57	8.30164
	Morning Personality	42.9061	213	14.86767	32.3239	213	6.88197
	Total	42.8423	691	14.55693	32.6556	691	7.46509

Table (5) shows that there are apparent differences between the arithmetic means and the subjective vital standard deviations, procrastination behavior according to a number of demographic variables (personality pattern, morning, evening, gender, age, academic average, specialization). To show the

significance of the statistical differences between the arithmetic means, the analysis of variance was used. Table (6) shows this.

Table (6): Multiple variance analysis of the effect of (personality type, morning, evening, gender, age, academic average, specialization) on the subjective vitality, procrastination behavior

Source of variance	Fields	Total squares	Freedom Levels	Statistical significance	mean squares	F Value
Sex	Total degree of self-vitality	1073.602	2	.000	536.801	7.707
	Total degree of procrastination	1473.829	2	.048	736.915	3.058
Age	Total degree of self-vitality	1618.173	2	.005	809.086	11.616
	Total degree of procrastination	15585.338	2	.001	7792.669	32.341
Specialization	Total degree of self-vitality	1196.684	2	.003	598.342	8.591
	Total degree of procrastination	1562.400	2	.040	781.200	3.242
Average	Total degree of self-vitality	1590.384	2	.001	795.192	11.417
	Total degree of procrastination	5574.130	2	.011	2787.065	11.567
Do you suffer from illness?	Total degree of self-vitality	320.451	1	.032	320.451	4.601
	Total degree of procrastination	1034.925	1	.039	1034.925	4.295
Personality (Morning-Evening)	Total degree of self-vitality	4152.717	39	.022	106.480	1.529
	Total degree of procrastination	15049.530	39	.013	385.885	1.602
Error	Total degree of self-vitality	44715.986	642		69.651	
	Total degree of procrastination	154691.230	642		240.952	
Total	Total degree of self-vitality	735706.000	691			
	Total degree of procrastination	1256729.000	691			
The edited model	Total degree of self-vitality	55625.415	690			
	Total degree of procrastination	198060.101	690			

It is obviously noticed in Table (6) that there are statistically significant differences, at the significance level ($\alpha \leq 0.05$), in the self-vitality according to the effect of the variables (sex and in

favor of females, where the arithmetic mean was (29.370) for females compared to the average (26,437) for males. This result can be justified because of the large number of duties and tasks and the roles that females play, they are: (mother, employee, educator, wife). They perform their social duties, and they have a number of daily tasks and practices that should be done. This makes them more positive and having a sense of vitality and physical strength, otherwise they will feel shortened in one or more aspects. This result differs from the results of Al-Obaidi's study (2020), which showed that the differences in self-vitality are in favor of males compared to females. Concerning the variable of suffering from diseases, the results were in favor of people who do not suffer from diseases, with an average of (28.515), compared to those who have previous diseases (26,620). This indicates that people who had previous diseases experience weakness of self-vitalism which led to the exhaustion of their bodies, and affected their ways of thinking and adaptation. Such diseases impeded their ability to do their works, exercises, tasks and roles. This is reflected in their level of achievement, and the variables of the morning personality, evening personality, age, specialization, average, and personality type (morning-evening).To identify the significance of the differences between the arithmetic averages that are attributed to the variables of the demographic study, the two-dimensional comparisons were used employing the Scheffe method as in Table (7).

- There are statistically significant differences at the significance level ($\alpha \leq 0.05$) in the procrastination behavior according to the effect of the variables (sex and in favor of males), where the arithmetic mean was (33.219) compared to the arithmetic average of females (32.009). This can be explained by the nature of the psychological and physical characteristics of males compared to females. Males always want to postpone work and achievement, and they are less accurate at this stage of achievement levels, more inclined to satisfy their psychological needs and personal desires, which are dominated by emotional needs. Concerning the variable of suffering from diseases, the results showed that the procrastination behavior is higher in those who have diseases compared to those who do not have diseases, with an arithmetic mean of (46,866),while the arithmetic mean of those who do not suffer from diseases is (43.461). This is interpreted as that people who suffer from illness cannot do their works in specific times and places, and this is reflected in their self-motivation and desire to accomplish tasks and perhaps their excessive and continuous thinking about their illnesses and physical suffering. This affects them and their behavior in life in general, and the behavior of procrastination in particular. To identify the significance of the differences between the arithmetic means that are attributed to the variables of the demographic study, the two-dimensional comparisons were used following the Scheffe method, as it is shown in Table (7)

Table (7) Dimensional Comparisons following Scheffe's method for the effect of the variables of age, specialization, academic average and personality type (morning, evening) on the self-vitality and procrastination behavior (n = 691)

Total degree of procrastination				Total degree of self-vitality		
Age	Older than 25	23-25	19-22	Older than 25	23-25	19-22
19-22	17.8093*	1.4552	----	7.0297*	-.3787-	----
23-25	16.3541*	-----	-1.4552-	7.4084*	--	-.3787-
Specialization	Humanities	Forensic Sciences	Medical Sciences	Humanities	Forensic Sciences	Medical Sciences
Medical Sciences	2.7430	5.7789*		2.9376*	-.3602-	-------
Forensic Sciences	3.0358	------	5.7789*	2.5774*	------	-.3602-
Academic Average	Good	Very Good	Excellent	Good	Very Good	Excellent
Excellent	8.5155*	1.9422	------	4.4619*	1.0440	------
Very Good	6.5733*	------		5.5059*	------	

It is obviously noticed in Table (7) that the differences between the two measures of subjective vitality and procrastination behavior, as per the age variable, came in favor of individuals who have reached the age of more than (19-22) years, followed by those who have reached the age of (23-25) years. This is justified by looking at the characteristics of these age stages that require individuals and limit them to be active, strong and adventurous, and to stay away from the daily routine and do work and activities that are characterized by fun and excitement. Concerning the variable of specialization, the differences came on the scale of self-vitality in favor of those enrolled in humanities, followed by those studying forensic specializations. This highlights the fact that students of humanities, as per the nature of their specializations, study practical or applied subjects, and therefore their self-vital factor must rise compared to students of forensic specializations. At the same time, the self-vitality factor decreases. This happens due to the fact that their specializations are purely theoretical and do not require them to go for practice in certain places. Besides, their specializations are more dependent on memorization and comparison between scientific references, thus depending on the student's ability to study, review and memorize. The differences were in favor of those studying forensic specializations, followed by the students of humanities concerning the variable of procrastination. This means that the students of forensic specializations are more

procrastinating in their behavior compared to those in other departments. This can highlight the fact that students of forensic specializations may have more academic and practical duties and requirements, so they suffer from pressure in the requirements of courses, periodic homework and the completion of tasks frequently. The role of the faculty members can be a real burden as they increase the scientific burden and pressure on students in their mission to refine the students' personalities, and help them gain knowledge and excellence in their specializations. Since this specialization is more in need of achievement, preservation and follow-up than other disciplines, students suffer from the behavior of procrastinating in completing the tasks and homework. Concerning the academic average variable, the differences came in favor of those with "very good" averages, followed by those with "excellent" averages in the self-vitality variable. This can tell us about the fact that students with high achievement (excellent) often spend long hours in the process of completing their academic requirements, so they appear less energetic. This is because their interest in social and entertainment aspects is less and their focus on achievement is what occupies their time and self-tasks. They suffer from a lack of positive sense of vitality and energy. Concerning the procrastination variable, the differences were for those with "good" averages, followed by those with "very good" averages. This can tell us more about the fact that students with excellent achievement are more committed and eager to perform their duties and not procrastinate in contrast to students with low achievement. It can be said that their daily habits and personal characteristics such as indifference, lack of desire for achievement, and lack of a sense of individual responsibility are a clear reason for the low level of achievement and the accurate fulfillment of the roles and tasks required of them, as well as the fact that these individuals have the lowest level of self-vitality. It can also be said that the lack of experience and personal skills is an obstacle to their satisfaction with achievement and carrying out their tasks, and their feelings of frustration, failure and constant anxiety may be a reason for their actions. For the purpose of detecting was used as shown in Table (8).

Table (8) shows the differences in self-vitality and procrastination behavior according to the morning and evening personality type variable (n = 691)

Variable	Personality Type	Number	Mean	Standard Deviation	T Value	Statistical Significance
Total degree of self-vitality	Evening personality	295	29.2678	11.36378	2.474	.014
	Morning personality	213	26.7559	11.19748		
Procrastination	Evening personality	295	39.0610	19.79872	3.370	.001

	Morning personality	213	33.0188	20.14100		

It is obviously noticed, in Table (8), that the differences in self-vitality and procrastination as per the variable of the morning and evening personality type came in favor of the evening personality. This can highlight the fact that the study environment for the evening personality is most active and energetic in the evening times and it continuous until the dawn of the next day. Furthermore, the Covid-19 pandemic has negatively affected the biological clock of individuals, in which their sleep and activity times are reversed. This result can also be justifies by high temperatures during the day and the morning period, which makes individuals spend much time in the evening period in activities and social events. Moreover, the study members tended to have free time and did not engage in specific work environments during the morning period. This behavior affected the nature of their lives and the results of the study. The results of this study show a great affinity with other studies conducted by Staller, et al(2021), Przepiórka, Błachnio, & Siu, (2019), Randler, &Engelke, (2019), Exelmans, et al, (2019), Jankowski, & Ciarkowska(2008),Díaz-Morales, Ferrari, & Cohen(2008), Saleh, Burhan & Alzahawi (2020), Almasri (2020).

The results related to the third hypothesis:

To answer the third hypothesis of the study, which states, "It is possible to predict the self-vitality and procrastination behavior through the personality pattern (morning-evening) among university students," a progressive multiple regression analysis was used (self-vitality and procrastination behavior as a dependent variable (the test), while the personality pattern (morning-evening) is a predictive variable for the study sample as a whole. Table (9) shows this.

Table (9) shows the binary correlation matrix of the variables (morning and evening personality) with the dependent variables (self vitality, procrastination)

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VARIABLE/DIMENSION	PERSONALITY (MORNING – EVENING)	STATISTICAL SIGNIFICANCE
Self-vitality	-.112-	.003
procrastination	.108	.004

Table (9) shows that there are positive and negative correlations that are statistically significant at the significance level ($p < 0.01$), where the value of the highest negative correlation coefficient between the subjective vitality and personality style was ($t = .211$). It is a relationship that proves that the more the personality type increases in a morning or evening direction as one of the patterns whose individuals suffer from some disorders and symptoms of physical and general vitality, the more this is reflected in the vitality of the individual and his ability to satisfy his daily needs and practice his general skills in his life. The correlation coefficient for procrastination and personality

type reached (t = .108).This indiicates a positive relationship between the two variables, and the effect of each is reflected on the other. The multiple regression analysis was also carried out using the Enter method to determine the predictability of the predictor variable (morning and evening personality) with the dependent variables (self-vitality, procrastination) being predicted. This is shown in Table (10).

Table (10) Results of Multiple Linear Regression Analysis: The increase in the squares of the correlation coefficients between the dependent variable and the independent variables that contributed to explaining the variance of the dependent variable (subjective vitality and procrastination)

Dependent Variable	Variable	Section y) Constant	Non-standard regression coefficient (B)	Standard Regression Coefficient (Beta)	Correlation coefficient square R2	Modified Correlation Coefficient R2	"t" value	"t" significance	"f" value	"f" significance
(1)	2) (	48.575	-.207-	.070	.112	.013	14.260	.000	8.724	.003
	3) (	27.778	.212	074	.010	.012	2.862	.004	8.190	.004
The independent variable; the morning and evening personality. (2) The self- vitality variable. (1)(3) Procrastination variable										

As it is seen in Table (10), the explanatory variables that were entered in the multiple regression equation are: the variable of self-vitality, which explained (.013) of the variation in the morning and evening personality patterns, while the variable of procrastination behavior (.012) explained the variance.It becomes clear from the results of the regression analysis that the variables that contributed statistically ($\alpha = 0.05$) to the interpretation of the variation of scores on the scale of the morning and evening personality style recorded the highest percentage of explanation of the variance; the self-vitality variable (13%), followed by procrastination behavior (12%) respectively. This tells us more about the fact that the self-vitality is considered a decisive factor for the positive personality, and the positive impulse, which is reflected through the entire life of the individual and makes him feel the ability to go on through the various paths of his life. It includes his physical vitality, mental vitality, emotional vitality, and social vitality, which is the core of an individual's life and includes all the fields of his life. Its impact is reflected in his daily behavior, personal skills, experiences and practices that he carries out all the time and makes him more capable of self-regulation, arranging his

appointments and his own affairs. This depends on the type of personality; morning or evening, where the individuals of each type are characterized by a set of characteristics and features adjacent to the individual, including the behavior of procrastination and commitment to the periodic tasks that he performs, as well as the excitement and activity that he practices in his life, where individuals enjoy high self-vitality activity and they are mostly having morning personalities. This type of personality has more positive traits than the evening one.

Recommendations:

Based on the results obtained, the following points can be recommended:

- Preparing counseling and preventive programs concerned with developing self-vitality, reducing procrastination behavior and regulating the biological clock among students.
- Conducting more studies that examine the relationship of morning and evening personality types with other variables and various categories.
- Attracting the attention of those concerned in universities regarding the change in lecture times, the shift of study hours, and its psychological and social affects.
- Holding workshops to help students adapt positive psychological behaviors with regard to the morning and evening personality types.

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