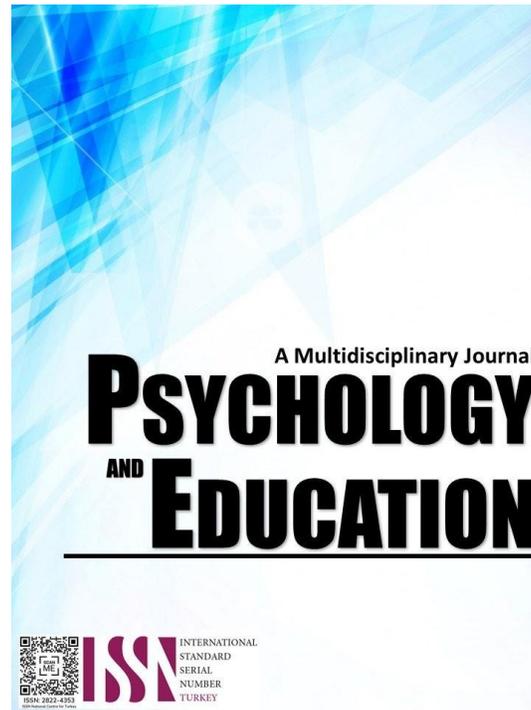


GRIT AND SITUATIONAL MOTIVATION IN PHYSICAL EDUCATION AS PREDICTORS OF LEISURE ACTIVITY PARTICIPATION AMONG COLLEGE STUDENTS



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Grit and Situational Motivation in Physical Education as Predictors of Leisure Activity Participation among College Students

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Abstract

This descriptive-correlational study aimed to assess the influence of grit and situational motivation in physical education on the leisure activity participation of college students in selected public colleges and universities in the Province of Bukidnon, Region X. Three instruments were adapted to measure the levels of grit, situational motivation in physical education, and leisure activity participation among the students. The collected data were analyzed and interpreted to conclude. The findings indicated that the college students exhibited high grit levels, situational motivation in physical education, and leisure activity participation. Additionally, a significant relationship was found between grit, situational motivation in physical education, and leisure activity participation. Moreover, the results demonstrated that grit and situational motivation in physical education significantly influence leisure activity participation. These findings have practical implications for educators and policymakers, suggesting the need for interventions that promote grit and situational motivation in physical education to enhance leisure activity participation among college students.

Keywords: *situational motivation, physical education, leisure activity participation*

Introduction

Non-participation in leisure activities is a global issue, prevalent in both developed and developing countries (World Health Organization, 2018; Zhang et al., 2020). In Sweden, for instance, many young people in disadvantaged areas are less involved in organized leisure activities, negatively affecting their health and social development (Fredriksson et al., 2018). This issue is not limited to specific age groups, as leisure time disengagement is a significant issue when young people ages 18-21 cannot participate in planning and executing their leisure activities (Beniwal, 2018). Disengagement from leisure activities can increase stress and decrease mental health (Fancourt et al., 2021). Many university students worldwide withdraw from leisure activities due to intense academic demands, societal pressures, and financial difficulties (Elkington & Carnicelli, 2023). According to the World Leisure Organization (WLO), participation in life situations is essential for sustaining overall health, and engaging in leisure activities is a key component. College students often neglect their leisure time and lack the knowledge and skills necessary to use their time effectively, leading to low levels of physical activity and an increased risk of chronic diseases (Chen & Liu, 2020; Datillo et al., 2019; Lobo et al., 2023; Ussery et al., 2018). The International Society for Leisure Studies suggests that participating in leisure activities should be engaging, diverse, and meaningful. However, students often engage in leisure activities to keep themselves occupied and combat boredom, resorting to passive screen time rather than more fulfilling pursuits. This global issue necessitates that colleges and universities worldwide educate students on using and participating in leisure activities effectively.

In Romania, 53% of college students spend some of their free time passively, relying on technology with limited outdoor activities during weekends due to academic commitments. A study conducted between 2014 and 2016 revealed disparities in activity levels among socio-demographic groups, possibly attributed to a lack of available leisure time. In China, a survey found that 40% of individuals aged 18-64 spend more than two hours engaging in leisure activities daily, down from 60% in a previous survey.

Numerous studies have examined the correlation between grit, situational motivation, and engagement in leisure activities. Koca et al. (2020) found that attitude, intention, and perseverance of effort in grit were significant predictors of leisure participation among university students. A longitudinal study by Hein et al. (2020) discovered that maintaining consistent interest in grit can enhance student motivation to participate in leisure activities. The study also identified that persistently improving one's grit was a key factor in the link between motivation and engagement in leisure activities among college students. This research highlights the importance of sustaining interest in grit and enhancing grit levels in connection to motivation for engaging in leisure activities among college students.

Despite extensive research on leisure participation globally, there is a notable gap in understanding why people in specific communities do not participate in leisure activities. While insights from studies conducted in various countries exist, there is a lack of research focusing on the local context. This gap means that the unique factors influencing leisure choices, whether cultural, social, or environmental, are not fully understood. Most existing studies focus on developed countries or regions with different contexts, often using longitudinal designs paired with variables like academic performance, stress, attitude, and well-being, leaving a lack of tailored insights for the local context. Filling this gap can help better understand and address the non-participation in leisure activities within the community.

Given the positive and significant impact of grit and motivation on leisure activity participation, contextualized studies are needed, particularly on how grit and situational motivation in physical education affect Filipino college students' participation in leisure activities. This study investigated the influence of grit and situational motivation in physical education on leisure activity participation

among college students in the Philippines.

The findings of this investigation could help validate existing knowledge on grit, situational motivation in education, and college students' participation in leisure activities. They will assist educators, educational leaders, and policymakers in augmenting education programs that encourage students to engage in leisure activities while promoting grit and situational motivation.

Research Questions

This study will determine the significant influence of grit and situational motivation in physical education on leisure activity participation among college students in Bukidnon Province. Specifically, it will answer the following questions:

1. What is the level of grit in physical education among college students in terms of:
 - 1.1. physical interest;
 - 1.2. physical effort;
 - 1.3. academic Interest; and
 - 1.4. academic effort?
2. What is the level of situational motivation in physical education among college students in terms of:
 - 2.1. intrinsic motivation;
 - 2.2. identified regulation;
 - 2.3. external regulation; and
 - 2.4. motivation?
3. What is the level of leisure activity participation among college students in terms of:
 - 3.1. relaxing activity;
 - 3.2. developmental activity;
 - 3.3. socializing activity;
 - 3.4. activity with an attractive environment;
 - 3.5. productive activity;
 - 3.6. esthetic activity;
 - 3.7. entertaining activity; and
 - 3.8. exciting activity?
4. Is there a significant relationship between:
 - 4.1. grit in physical education and leisure activity participation?
 - 4.2. situational motivation and leisure activity participation?
5. Do grit in physical education and situational motivation significantly influence leisure activity participation?

Literature Review

Grit

Grit, defined as the combination of passion and perseverance for long-term goals, is essential for personal and academic success (Duckworth, 2016). It has been linked to higher engagement and motivation in education, particularly when students develop an interest in physical activities (Bautista et al., 2023; Ulstad et al., 2016).

Physical effort and academic interest also play significant roles in enhancing grit and overall academic performance (Hein et al., 2019; Lee & Durksen, 2018). Studies have shown that students with high levels of grit are more likely to sustain academic interest and achieve better outcomes (Chen et al., 2021; Guelmami et al., 2022).

Situational Motivation

Situational motivation, encompassing intrinsic motivation, identified regulation, external regulation, and amotivation, is crucial for learning and performance in specific contexts (Wasserman et al., 2020). Intrinsic motivation, particularly, has been identified as a strong predictor of enjoyment and participation in physical education (Navarro-Patón et al., 2019; Suguis & Belleza, 2022).

The role of social support and the learning environment in enhancing intrinsic motivation is also significant, particularly in motivating students to engage in moderate to vigorous physical activities (Abdullah et al., 2019; Kalajas-Tilga, 2020).

Leisure Activity Participation

Leisure activity participation is crucial for maintaining overall health, yet many college students neglect this aspect due to academic pressures and societal expectations (World Health Organization, 2018; Elkington & Carnicelli, 2023). Research indicates that leisure participation is influenced by various factors, including grit and situational motivation.

Studies suggest that students with higher grit and motivation are more likely to engage in diverse and meaningful leisure activities, which contribute to their well-being and personal development (Koca et al., 2020; Hein et al., 2020).

Methodology

Research Design

This study employed a quantitative method, specifically a descriptive-correlational design. According to Babbie (2010), the main goal of quantitative research is to collect numerical data and generalize it to different populations. Creswell (2014) defined the quantitative approach as gathering, assessing, analyzing, and documenting the study's findings. Similarly, Coghlan and Brydon-Miller (2014) described quantitative research as a methodical investigation of events by collecting measurable data and using statistical, mathematical, or computational methodologies. A descriptive research design will be utilized to observe and describe the characteristics of the population or phenomenon through surveys, observations, or other tools, as outlined by Babbie (2016). Additionally, a correlational research design will determine the relationship between grit, situational motivation in physical education, and leisure activity participation among college students.

Respondents

The respondents of this study were 209 college students officially enrolled in tertiary physical education (PE) subjects during the academic year at Schools A, B, and C. The sample size was determined using the Raosoft sample size calculator, set at a 95 per cent confidence level, a five per cent margin of error, and a 90 per cent response distribution. The resulting sample sizes were 69 students from School A (out of 2500), 70 students from School B (out of 7000), and 70 students from School C (out of 7000). Stratified random sampling was employed to select the respondents.

Instrument

This study utilized three adapted and modified validated survey questionnaires to measure college students' grit, situational motivation, and leisure activity participation. The Physical Education Grit (PE-Grit) questionnaire developed by Guelmami et al. (2021) was employed to measure grit in physical education. This 16-item, 7-point Likert scale questionnaire assesses four domains: physical interest, physical effort, academic interest, and academic effort. The PE-Grit questionnaire has a reliability score ranging from 0.83 to 0.86.

Situational motivation in physical education was measured using the Situational Motivational Scale (SIMS) by Osterlie et al. (2018). This 16-item, 7-point Likert scale questionnaire evaluates four domains: amotivation, external regulation, identified regulation, and intrinsic regulation. The reliability of the SIMS ranges from 0.78 to 0.92. In this study, the scaling of responses for each item ranges from 5 (corresponds exactly) to 1 (does not correspond at all).

The Leisure Activity Participation Scale (LAPS) by Şimşek and Çevik (2020) measured leisure activity participation. This 34-item, 5-point Likert scale questionnaire covers eight domains: relaxing activity, developmental activity, socializing activity, activity with an attractive environment, productive activity, esthetic activity, entertaining activity, and exciting activity. The LAPS has a Cronbach alpha of 0.945, indicating high reliability. Responses for each item range from 5 (strongly agree) to 1 (strongly disagree).

Pilot testing of the adapted questionnaires yielded the following Cronbach's alpha values: Grit (0.930), Situational Motivation (0.779), and Leisure Activity Participation (0.979). These values, all above the threshold of 0.70, indicate high reliability, demonstrating that the items included in each questionnaire are clear, reliable, and consistently measure the intended constructs.

Procedure

The respondents were contacted through letters addressed to Schools A, B, and C. Bona fide students were approached and provided with a letter explaining the study's goal and seeking their consent to participate. Participants were asked to sign an informed consent form attached to the letter, indicating their willingness to participate in the study. Data retrieval and collation were conducted on-site upon completion of the survey questionnaires. The researcher collected the completed questionnaires from the participants and entered the collected data into a secure database for analysis.

Statistical analysis techniques, such as descriptive and inferential statistics, were employed to analyze the data. Careful attention was paid to ensure the validity and reliability of the findings throughout the analysis process. The results were interpreted and presented clearly and concisely upon completing the statistical analysis, utilizing tables, charts, and narrative descriptions to convey the key findings.

Ethical Considerations

This study adhered to ethical standards with approval from the Research Ethics Committee (REC) at the University of the Immaculate Conception (UIC). It emphasizes informed consent, confidentiality, and participant welfare. Data were securely managed, and participants were respected through transparent communication and fair treatment.

Results and Discussion

This section presents the findings according to the study's research questions. To compare the mean and find out the significance between variables.

Grit in PE of College Students

Table 1 shows the level of grit of college students. It shows that the overall mean level of grit is 3.90, described as high. It means that the grit of college students towards physical education is oftentimes manifested. In addition, the overall standard deviation is .47, meaning that most students exhibit similar grit levels. This result implies that the grit levels of college students were met. This further means that the respondents of this study showed high levels of interest and effort across both physical and academic dimensions. Moreover, college students have also established consistent engagement and perseverance in their activities. This finding supports the view of Duckworth (2016) that grit, which combines passion and perseverance, is crucial for success in various domains. As a result, these students are more likely to overcome challenges and achieve their long-term goals.

Table 1. Descriptive statistics for the level of grit in physical education of college students

<i>Variables and Indicators</i>	<i>Mean</i>	<i>SD</i>	<i>Description</i>
Physical Interest			
1. Finding physical difficulties is very important, even though I encountered them during my physical education classes.	4.07	0.80	High
2. I Still do my physical activities regularly, even if I do more fun things.	3.98	0.80	High
3. Prioritizing physical activity exercise sessions in PE.	4.25	0.73	Very high
4. Always be interested in new exercises in PE classes.	4.42	0.73	Very high
Category Mean	4.18	0.51	High
Physical Effort			
1. Doing intense physical exercise in PE classes encourages me.	4.10	0.85	High
2. Maintaining adequate physical effort all year round.	3.84	0.74	High
3. Give my full effort in completing the exercises in PE classes.	4.43	0.69	Very high
4. Doing whatever is necessary during the physical practice in PE classes.	4.43	0.69	Very high
Category Mean	4.20	0.58	High
Academic Interest			
1. Going deeper into the theoretical side of PE is one of my interests, regardless of the time it takes.	3.85	0.79	High
2. Always be interested in acquiring new theoretical knowledge in PE.	4.08	0.85	High
3. Prioritizing my attention towards the importance of all theoretical subjects, including PE.	4.12	0.77	High
4. My theoretical duties are very important to me.	4.09	0.80	High
Category Mean	4.04	0.68	High
Academic Effort			
1. Completing my homework exercises in PE, regardless of their difficulty.	4.44	0.67	Very high
2. Focusing on PE classes to acquire new knowledge.	4.29	0.75	Very high
3. Reviewing regularly all theoretical subjects, including PE.	3.96	0.77	High
4. Being diligent in all theoretical subjects like PE.	3.98	0.79	High
Category Mean	3.18	0.44	Moderately high
Overall Mean	3.90	0.47	High

Situational Motivation in PE of College Students

Table 2 shows the level of situational motivation of college students. It shows that the overall mean level of situational motivation is 4.34, which is very high. It means that the situational motivation of college students is always manifested. In addition, the overall standard deviation of .49 indicates a moderate variability of responses among students. This result implies that while most students consistently exhibit high situational motivation, there is still some variation in how strongly different students experience this motivation. The very high level of situational motivation in physical education of college students affirms the study of Ada et al. 2018. High levels of intrinsic motivation and identified regulation are encouraging because they are linked to sustained engagement and positive attitudes toward physical activity.

Table 2. Descriptive statistics for the level of situational motivation in physical education of college students

<i>Variables and Indicators</i>	<i>Mean</i>	<i>SD</i>	<i>Description</i>
Intrinsic Motivation			
1. Thinking that it is interesting.	4.50	0.66	Very high
2. Thinking it is pleasant.	4.31	0.75	Very high
3. Engaging in physical activity because this is fun.	4.68	0.62	Very high
4. Feeling good when doing it	4.55	0.67	Very high
Category Mean	4.51	0.56	Very high
Identified Regulation			
1. Doing it for my good.	4.57	0.63	Very high
2. Thinking it is good for me.	4.68	0.57	Very high
3. Believing it is important for me.	4.67	0.56	Very high
Category Mean	4.64	0.51	Very high
External Regulation			
1. Engaging in physical activity because I am supposed to do it.	4.14	0.85	High



2. Engaging in physical activity because it is something that I have to do.	4.18	0.85	High
3. Feeling that I have to do it.	4.07	0.96	High
Category Mean	4.13	0.79	High
Amotivation			
1. Not seeing any good reasons to do physical activities	4.03	1.23	High
2. Being unsure if it is worth it to do physical activities.	4.05	1.19	High
3. I do not see what physical activities bring to me.	4.09	4.15	High
4. Being unsure if it is a good thing to pursue physical activities.	4.11	1.17	High
Category Mean	4.07	1.13	High
Overall Mean	4.34	0.49	Very high

Leisure Activity Participation

Table 3 shows the level of leisure activity participation of college students, which recorded an overall mean of 4.34, which is described as very high. This means that the level of leisure activity participation of college students is always observed. The standard deviation is .54, which is less than one, denoting that the respondents have ratings that are practically almost the same. The very high level of leisure activity participation of college students suggests that students consistently engage in leisure activities. This result confirms the International Society for Leisure Studies’ findings that participating in leisure activities is engaging, diverse and meaningful. (ISLS, 2020). The results indicate that our young people engage in leisure activities.

According to Simsek and Cevik (2020), people who engage in multiple leisure activities are better off physically and psychologically. Additionally, participating in various leisure activities may help alleviate or decrease an individual’s chronic stress. This is supported by the findings of Kim et al. (2015), who found that college students who have a positive attitude towards leisure activities are more likely to engage in them, leading to reduced stress and improved psychological well-being, suggesting that universities should offer courses related to leisure to encourage and maintain a positive attitude toward free time.

Table 3. *Descriptive statistics for the level of leisure activity participation in physical education of college students*

<i>Variables and Indicators</i>	<i>Mean</i>	<i>SD</i>	<i>Description</i>
Relaxing Activity			
1. Engaging in leisure activities brings me relief.	4.17	0.86	High
2. Participating in leisure activities helps me distance myself from stress.	4.34	0.80	Very high
3. Engaging in leisure activities helps me feel psychologically positive.	4.37	0.74	Very high
4. Feelingmentally relieved after engaging in leisure activities.	4.40	0.76	Very high
5. FeelingI experienced after participating in leisure activities.	4.41	0.76	Very high
Category Mean	4.34	0.68	Very high
Developmental Activity			
1. Engaging in leisure activities positively impacts my physical well-being.	4.55	0.70	Very high
2. Participating in leisure activities helps me safeguard my health.	4.49	0.68	Very high
3. Participating in leisure activities positively affects my psychological well-being.	4.47	0.69	Very high
4. Appreciating leisure activities enhances my quality of life.	4.48	0.68	Very high
5. Feeling my skills improve through engaging in leisure activities.	4.50	0.72	Very high
Category Mean	4.50	0.60	Very high
Socializing Activity			
1. Encountering new people through engaging in leisure activities.	4.36	0.76	Very high
2. Finding leisure activities asan opportunity for socialization.	4.36	0.76	Very high
3. Liking talents within the social environment of participating in leisure activities.	4.28	0.83	Very high
4. Interacting with different individuals when participating in leisure activities.	4.26	0.83	Very high
5. Participating in leisure activities allows me to participate in group activities.	4.33	0.77	Very high
Category Mean	4.32	0.69	Very high
Activity with an Attractive Environment			
1. Participating in leisure activities in a clean and well-kept environment.	4.54	0.66	Very high
2. Engaging in leisure activities in a pleasant environment.	4.59	0.63	Very high
3. Participating in leisure activities because I am impressed by the area's design.	4.06	0.83	high
4. Finding the expected attractive environment while engaging in leisure activities.	4.29	0.74	Very high
Category Mean	4.37	0.58	Very high
Productive Environment			
1. Engaging in leisure activities strengthens my productive side.	4.43	0.69	Very high
2. Producing something as a result of participating in leisure activities.	4.32	0.72	Very high
3. Feeling useful to myself and to my environment due to participating in leisure activities.	4.28	0.73	Very high
4. Liking being productive due to participating in leisure activities.	4.37	0.71	Very high
Category Mean	4.35	0.62	Very high
Esthetic Environment			
1. Engaging in leisure activities appeals to my aesthetic feelings.	4.14	0.78	High
2. Engaging leisure aesthetically.	3.99	0.83	High
3. Engaging in leisure activities has an aesthetic character.	4.07	0.83	High



4. Finding a chance to express myself with the aesthetic aspect of participating in leisure activities.	4.16	0.82	High
Category Mean	4.09	0.74	High
Entertaining Activity			
1. Entertaining time due to participating in leisure activities.	4.23	0.74	Very high
2. Experience very good quality entertainment by participating in leisure activities.	4.32	0.69	Very high
3. Enjoying leisure activities is entertaining.	4.45	0.67	Very high
4. Experiencing positive feelings due to participating in entertaining leisure activities.	4.45	0.67	Very high
Category Mean	4.36	0.60	Very high
Exciting Activity			
1. finding a chance to do something different to have fun when participating in leisure activities.	4.43	0.70	Very high
2. I experienced pleasant situations and engaged in leisure activities that I could not expect.	4.32	0.74	Very high
3. Being impressed by the exciting aspect of participating in leisure activities.	4.47	0.69	Very high
Category Mean	4.41	0.64	Very high
Overall Mean	4.34	0.54	Very high

Significance of Relationship Between Grit, Situational Motivation, and Leisure Activity Participation

Table 4 shows the correlation between grit in physical education, situational motivation in physical education, and leisure activity participation. Based on the findings, grit in physical education and leisure activity participation obtained a positive r coefficient with a corresponding p-value of 0.000, which is less than a 0.05 level of significance. Likewise, it can also be observed that situational motivation in physical education and leisure activity participation obtained a positive r coefficient of 0.536 with a corresponding p-value of 0.000, which is less than a 0.05 level of significance.

Table 4. Correlational analysis for the relationship between grit, situational motivation, and leisure activity participation

Independent Variables	Dependent Variables	r-value	p-value	Description
Grit	Leisure Activity	0.562	0.000	Significant
Situational Motivation		0.536	0.000	Significant

Significance of Influence Between Grit, Situational Motivation, and Leisure Activity Participation

Table 5 shows the regression analysis to determine if grit and situational motivation in physical education significantly influence college students’ participation in leisure activities. The standardized coefficients for grit and situational motivation in physical education are .452 and .373, respectively, with both variables showing significant t-values (grit: t = 6.336, situational motivation: t = 5.509) and p-values of .000. This indicates that both grit and situational motivation are significant predictors of leisure activity participation. The table provides the R and R2 values. The R-value represents the simple correlation of 0.636, indicating a moderately strong correlation. The R2 indicates how much of the total variation in the dependent variable, students’ participation in leisure activity, can be explained by the independent variables, grit in physical education and situational motivation in physical education. 40.5% can be explained in this case, which is quite good.

Table 5. Regression analysis for the relationship between grit, situational motivation, and leisure activity participation

	Standardized Coefficients	t-value	p-value	Interpretation
Grit	0.452	6.336	0.000	Significant
Situational Motivation	0.373	5.509	0.000	Significant
R = 0.636				
R = 0.405				
F = 69.32				
p-value = 0.000				

Grit in PE of College Students

Physical Interest. Specifically, examining the physical interest dimension revealed that its category mean of 4.18 is described as high, which means that this particular dimension is oftentimes evident. The mean ratings of the items ranged from 3.98 to 4.42. The item, students expressed very high interest in new exercises, has a mean of 4.42, while the item, prioritized exercise sessions in PE, has a mean rating of 4.25, which both described as very high, which means they are always evident among college students. This means that college students have felt a high level of interest as they engage and encounter new exercises in PE. This implies that students engage in exercises to boost their motivation and performance. The findings support that students become highly involved when encountering situations that capture their attention. Furthermore, when the student's interest grows, their level of engagement also increases. This aligns with the findings of Bautista et al. (2023), who found that when students are interested in subjects like physical education, they tend to be more engaged and motivated in their school activities. According to Duckworth (2016), activities are performed fully when a student has sustained interest. This also means that when a person’s sustained interest in physical activities is cultivated, he or she

engages in these activities willingly and with greater enthusiasm.

Physical Effort. In physical effort, it has a mean of 4.20 which is described as high. This means that this dimension of grit of college students is oftentimes evident as supported by all mean ratings of the items in this dimension which ranges from 3.84 to 4.43. The item, maintaining adequate physical effort all year round has a mean rating of 3.84 described as high which means oftentimes evident while the item, doing intense physical exercise in PE classes encourages me has a mean rating of 4.10 which is also described as high which means that it is oftentimes evident among college students. The result suggests that college students show persistence in their physical activities. The results align with the findings of Hein et al. (2019) who discovered that when a person consistently puts effort into physical activity, they gradually develop an intention to remain active. This implies that students are more likely to engage in moderate to vigorous physical activity through giving intense physical exercises in PE classes that will eventually build grit and improve their performance. Furthermore, the study of Meany et al. (2021) found that in high school, students put consistent effort towards long-term goals which can predict success in physical education. This implies that grit is not just one thing but a mix of factors that affect effort and achievement.

Academic Interest. It shows that academic interest in college students has a category mean of 4.04, which is described as high and often evident. The item mean ranges from 3.85 to 4.12. On the other hand, the item going deeper into the theoretical side of PE is one of my interests, regardless of the time it takes. It has a mean of 3.85, which is described as high and is often evident in college students, while the item, always being interested in acquiring new theoretical knowledge in PE, has a mean of 4.08, which is described as high. A strong academic interest is needed to stay motivated and achieve long-term academic success (Duckworth, 2016). The findings indicate that college students have established a sense of persistence and motivation in physical education. Further, this implies they are inclined to remain actively engaged in physical education, contributing to overall personal growth and academic success.

Furthermore, Lee and Durksen (2018) discovered that enthusiasm for the subject, self-expression opportunities, confidence, and aspirations influence academic interest. Moreover, Light and Nencka (2019) found that academic interest correlates with grit, suggesting that students with high interest also demonstrate persistence. In addition, Guelmami et al. (2022) discovered that higher academic interest leads to a deeper approach to learning. This might be the case since a strong interest in a subject can boost confidence, fuel persistence, and encourage a deeper understanding of the material. If a person is truly interested in something, they are likelier to stick with it, work harder, and dig deeper to understand it better. As a result, if people feel genuinely interested in what they are learning, they approach their studies with more enthusiasm and dedication, leading to better outcomes.

Academic Effort. In terms of academic effort, it has a mean of 4.18, which is described as high. This means that this dimension of college students' grit is often evident, as supported by all high mean ratings of the items in this dimension, which range from 3.98 to 4.44. The item, finishing homework assignments, regardless of their difficulty, has a mean rating of 4.44, described as very high, which means it is always evident, while the item, focusing on PE classes to acquire new knowledge, has a mean rating of 4.29 which is also described as very high which means that is also always evident among college students. The result suggests that college students are diligent in their academic pursuits. The results back up the findings of Guelmami et al. (2022), who discovered that when a person continuously works hard and stays determined, he or she will achieve his or her goals and succeed in academics. Consequently, Datu et al. (2016) discovered that one of the motifs that form a person's continuous effort is not giving up despite the challenges and setbacks, which is necessary to acquire new knowledge and develop an academic interest in grit. Furthermore, Hodge et al. (2018) discovered that a focused acquisition of new knowledge, demonstrating a high level of academic interest, is essential to a person's sustained engagement in PE classes.

Situational Motivation in PE of College Students

Wasserman et al.'s study (2020) discovered that situational motivation drives an individual's engagement within the setting or context. When a person's motivation aligns with their needs, it can result in a strong desire to participate in activities that contribute to their personal growth. Østerlie et al. (2019) discovered that overall situational motivation was highly positive and associated with intrinsic and identified regulations but weakly associated with external motivation and motivation. This aligns with Deci and Ryan's (2016) findings, where no favourable association was found between external regulation and motivation. Moreover, according to the research, some studies revealed an inverse relationship between controlled motivation and exercise, while most found no such association.

Intrinsic Motivation. The dimension of intrinsic motivation reflects a category mean of 4.51, which is described as very high and always manifests. Examining closely revealed that the mean ratings range from 4.31 to 4.68. The item, believing that physical education is interesting, has a mean of 4.50, described as a very high meaning; it is always manifested among college students. Likewise, the item, Engaging in physical activity because this is fun, has a mean of 4.68, which is described as very high, which means that situational motivation in physical education among college students is always manifested. The results suggest that college students enjoy physical education because it is enjoyable and fulfilling. In addition, students also feel a sense of happiness in physical activity. This finding supports the study of Navarro-Patón et al. (2019) among college students, which revealed a positive relationship between intrinsic motivation and engagement in physical education. This means that students are more likely to become motivated to participate in an activity when they find it personally meaningful and enjoyable (Ryan & Deci, 2016). These findings support Suguis and Belleza's (2022) claim that respondents to their study's survey indicated high intrinsic motivation. significantly enhances their enjoyment and participation in physical education. This implies that people like to participate actively and regularly in physical activities because

they find it enjoyable and in line with their interests.

Consequently, research by Abdullah et al. (2019) discovered that university students in Malaysia found that factors such as social support and a positive learning environment contribute to their high intrinsic motivation. This suggests that intrinsic motivation is influenced by external factors when participating in activities. Moreover, Kalajas-Tilga (2020) found that intrinsic motivation predicts moderate to vigorous physical activity (MVPA). This implies that people naturally feel motivated to do things are more likely to engage in moderate to vigorous physical activity over time. Moreover, higher intrinsic motivation implies that students know their interests and desires, which drive their engagement in activities (Ryan & Deci, 2016).

Identified Regulation. The dimension on identified regulation reflects a category mean of 4.64, described as very high, which means it is always manifested. Examining closely revealed that the mean ratings range from 4.57 to 4.67. The item, thinking it is beneficial for oneself, has a mean of 4.68, described as a very high meaning; it is always manifested among college students. Likewise, the item, belief that it is important, has a mean of 4.67, which is described as very high, which means that situational motivation in physical education among college students is always manifested. The result suggests that college students engage in physical education because they see it as important and beneficial for themselves. The high level of identified regulation result confirms the findings of the study of Wang et al. (2016), where highly self-determined students were more likely to engage in physical activities because of the perceived personal benefits than students with low self-determined motivation and low perceived personal benefits. This means that high levels of identified regulation indicate that students engage in activities because they recognize and value the personal benefits (Ryan & Deci, 2020). Similar findings were found in the study of Milroy et al. (2015), which revealed that identified regulation predicted moderate physical activity and strength training for college students. This means college students having a sense of identified regulation can find time out of their busy schedules to engage in physical activities because they understand how important and beneficial these activities are. Moreover, the results revealed that college students find activities pleasurable and enjoying and this supports what Barton et al. (2023) revealed that there is an increase in identified regulation among Hispanic college students in a mandatory physical activity course, meaning that these students are more likely to value and internalize the benefits of physical activity when they find it enjoyable. However, it is important to note that while the current study found a positive association between identified regulation and physical activity, other research, such as Owen et al. (2013), found no association between students' identified regulation in PE and objectively measured moderate to vigorous physical activity. This suggests that this relationship might be more complex and influenced by other factors.

External Regulation. The dimension of external regulation has a category mean of 4.13, which is described as high, which means it is oftentimes manifested. The mean ratings range from 4.07 to 4.18. The item, engaging in physical activity because one is supposed to have a mean of 4.14, described as high, which means it is oftentimes manifested, while the item, because it is something one has to do, has a mean of 4.18, described as high, which means that external regulation is oftentimes manifested among college students. The result suggests that college students frequently participate in physical activities due to external pressures or obligations. This implies that when a person is externally regulated in engaging in physical activity, he or she performs to achieve or receive a reward or external praise (Gagne & Deci, 2005). High external regulations might not always be efficient for the promotion of long-term physical activity, but they can be effective in increasing short-term physical activity (Wang et al., 2016). This means that external factors play a role but are not the primary source of motivation. Consequently, the findings of the study by Rodrigues et al. (2023) indicate that while external regulation can promote initial engagement, it is less effective in sustaining long-term participation than intrinsic motivation. Furthermore, Kalajas-Tilga et al. (2020) discovered a non-significant relationship between external regulation and moderate to vigorous physical activity. This suggests that external motivators do not effectively motivate people to exercise and be physically active.

Amotivation. The motivation dimension of situational motivation in physical education has a mean of 4.07, which is described as high, which means that college students' motivation is often manifested—the items in this category range from 4.03 to 4.11. Notably, the item that does not see any good reasons to engage in physical activities has a mean rating of 4.03, described as high and often manifests among college students. The item, being unsure if it is worth it, has a mean of 4.05, described as high, and it means that it is oftentimes manifested. Amotivation occurs when a person has no feeling or intention to act (Ryan & Deci, 1985). As a result, in the context of physical activities, amotivation describes a person engaging in physical activity without enthusiasm. This suggests that an amotivated individual may participate in these activities due to external pressures or obligations, resulting in not engaging in such activities for a long time. This finding aligns with the study of Luo et al. (2022), which found that amotivation manifested predominantly through non-attendance, minimal participation in class, and a lack of intention to engage in physical activity after graduating from school. The findings indicate that decreased support from physical education teachers could result in higher levels of amotivation in students. This could be why an individual exhibits a lack of interest in physical activities and does not maintain involvement in such pursuits for an extended period (Burgueño et al., 2020). Though this study found a high level of amotivation among college students, the study by Kljajević et al. (2021) revealed that high levels of amotivation towards physical activity are prevalent among university students. The study suggests that the absence of motivation or enjoyment in engaging in physical activities may stem from the absence of motivation or motivation.

Leisure Activity Participation of College Students

According to Simsek and Cevik (2020), people who engage in multiple leisure activities are better off physically and psychologically.

Additionally, participating in various leisure activities may help alleviate or decrease an individual's chronic stress. This is supported by the findings of Kim et al. (2015), who found that college students who have a positive attitude towards leisure activities are more likely to engage in them, leading to reduced stress and improved psychological well-being, suggesting that universities should offer courses related to leisure to encourage and maintain a positive attitude toward free time.

Relaxing Activity

The relaxing activity of college students reflects a mean of 4.34, interpreted as very high, which means that the participation of college students in relaxing activities is always observed. The mean ratings of the items in this dimension range from 4.17 to 4.41. The item, engaging in leisure activities helps them feel psychologically positive, has a mean of 4.37, described as very high, which means that this particular activity is always observed among college students. Notably, the item, mentally relieved, reflects a mean of 4.40, which is described as very high, which means it is always observed among college students. The results imply that college students engage in relaxing activities besides physical activities during their free time. This engagement in relaxing activities may be part of their daily routine. The findings are consistent with the European study by Zasina (2020), which revealed that many college students in Italy preferred passive leisure activities at home, with 89.2% frequently gathering with friends for these activities. It was also discovered that 75.9% of Polish college students engaged in leisure activities at pubs and cafes. In addition, it was found that students generally preferred low-key activities that did not require physical exertion during their free time. Furthermore, the study by Abdulrahman et al. (2021) among Saudi Arabian medical students found that social media browsing, watching movies, spending time with friends and family, and using the internet were among the most popular pastimes among the students. Also, it was revealed that only 43.3 per cent of students participated in physical activity for more than 30 minutes daily. This suggests that passive leisure is more appealing, and individuals engaging in it should be informed to make wise choices regarding their leisure activities (Aguilar & Hurst, 2007).

Developmental Activity

Correspondingly, the developmental activity of college students reveals a category mean of 4.50, which is described as very high and always observed. The item strongly agreed that leisure activities positively impact physical well-being has a mean of 4.55, and the item, help safeguard their health has a mean of 4.49, which is described as very high, which indicates the developmental activities of college students are always observed. This suggests that college students not only engage in developmental activities frequently but also perceive these activities as having a significant positive impact on their physical well-being and health. The findings support the study of An et al. (2021), which noted that student's engagement in developmental leisure activities is important for physical health and skill improvement.

Another study by Krnjaić (2020) emphasizes that hobbies, as a form of developmental activity during leisure time, can significantly impact the well-being of young people. This means that individuals who choose developmental activities based on their interests, abilities, knowledge, and resources dedicate time and energy to these pursuits during their free time. Moreover, the study of Hartman and Anderson (2021) revealed that leisure activities are crucial for personal growth in the early stages of adulthood because they give people the chance to manage stressors and cope with challenges related to development.

Socializing Activity

The category mean of socializing activity among college students shows a mean of 4.32, which is described as very high, which means that it is always observed. The items in this category are ranging from 4.26 to 4.36. Notably, the item, engaging in these activities allows them to meet new people has a mean rating of 4.36, described as very high and means it is always observed among college students; the item, participate in group activities has a mean of 4.33, described as very high, and it means that it is always observed. This implies that college students always spend their time in socializing activities in their free time. The result above aligns with the findings of Hartman and Anderson (2021), who found that participating in social leisure activities significantly enhances students' social networks and overall well-being. This is supported by the study of Jimenez (2017), which revealed that students often socialise with friends, participate in group activities, and attend social gatherings since these activities are valued for the social connections and relaxation they provide.

The study by Simsek and Cevik (2020) found that regular engagement in social activities during free time is essential. To maximize enjoyment, it is important to participate in these activities with a group of reliable, similar, and socially comparable individuals of the same social status. This was supported by the finding that individuals who participate in shared leisure activities tend to spend much time together, indicating that these groups provide more social support than other types of friendships. This emphasizes the importance of socializing activities as a key motivator for participating in leisure activities. Moreover, the study of Belosevic and Feric (2022) found that young people frequently engage in shared activities because they offer stronger social support than other types of friendships. This may explain the frequent engagement of socializing activities among college students during free time. This result implies that young people participating in social leisure activities are more likely to feel satisfied and gain sympathy from others participating in the same activity.

Activity with an Attractive Environment

In terms of activity with an attractive environment, an overall mean of 4.37 was described as very high, reflecting that it is always

observed. The mean ratings range from 4.06 to 4.59. The item, students highly valued engaging in leisure activities in clean and pleasant environments, has a mean of 4.54, described as very high, meaning that college students are always observed participating in leisure activities in an attractive area. This implies that college students frequently spend their time in activities that have an appealing environment. The finding supports the study of Mokr-Grabowska (2018), which studies the role of attractive environments in enhancing leisure experiences. This means nature-relatedness is associated with physical activity and participation in leisure activities (Molina-Cando et al., 2021).

The findings are consistent with those of Massougbojji et al. (2018), who discovered the importance of environmental quality for Canadian teenagers who participate in active leisure. The study revealed that students who participate more in leisure activities have access to more green spaces and parks within a 750-meter radius of their schools. This implies that green spaces enhance environmental safety, encouraging people to participate in more active leisure activities. This was supported by the result of Sanchez et al. (2022), where parks and gardens near their residence are the preferred places for leisure and free time activities.

Moreover, the study by Akcakese et al. (2024) investigates the impact of nature-based leisure activities on individuals' connection to nature. The study concludes that nature-based leisure activities can significantly enhance individuals' relationship with nature and promote behaviors that uphold environmental responsibility. This may be why many young people participate in activities connected to nature, which is due to their appreciation for natural resources and the sense of calmness this type of environment offers.

Further, the study of Wilkie and Trotter (2023) discovered that being in natural settings enhances feelings of restoration and positive emotions, whereas being in urban street settings diminishes feelings of restoration and increases negative emotions. Similarly, according to the study of Pongsak (2018), Asia's serene landscapes give students a chance to relax and meditate peacefully, offering a break from academic pressures. This could mean that college students in rural or urban areas often seek peaceful environments that positively influence their mood and engagement. In addition, spending time in nature may improve concentration, reduce stress levels, boost mood, and decrease the likelihood of experiencing negative emotions. As pointed out by Li et al. (2022), Liang (2022), and Pereira et al. (2018), people who spent time in nature felt positive emotions and less negative emotions.

Productive Activity

The category mean of productive activity among college students shows a mean of 4.35, which is described as very high and always observed. The mean ratings range from 4.28 to 4.43. The item, students believed that engaging in leisure activities increases their sense of usefulness, has a mean of 4.28, described as very high is always observed among college students. Notably, the item strengthens their productive side and has a mean of 4.43, which is described as very high and always observed among college students. The result implies that college students engage in productive leisure activities frequently. The findings are consistent with those of Buettner et al. (2011), who show that engaging in productive leisure activities enhances both personal productivity and work-life balance. Similarly, the study of Xue et al. (2022) revealed that engaging in productive leisure activities, such as crafting or sports, can result in tangible outcomes such as improved skills, completed projects, or even new social connections. This means that outcomes derived from productive activities contribute to a sense of accomplishment. Furthermore, the study of Mareque et al. (2019) discovered that university students in Spain who engage more frequently in productive extracurricular activities tend to be more creative. However, the study also found that despite an increasing interest in productivity, people have limited time in their daily schedules for such activities, with weekends and holidays emerging as the only periods when they can freely pursue productive activities.

Consequently, Das and Barman's (2019) study investigated and found that leisure-time productive activities significantly affect the mental health of college students. It discovered that college students who engage in productive activities for less than 2 hours daily and more than 2 hours are less mentally healthy than students who do not participate in productive activities during their leisure time. This suggests that the duration of engagement in productive leisure activities may not effectively promote positive mental health among college students.

Esthetic Activity

The dimension of esthetic activity reflects a category mean of 4.09, which is described as high, which means it is oftentimes observed. Examining closely revealed that the mean ratings range from 3.99 to 4.16. The item, students appreciated the aesthetic aspects of leisure activities, has a mean of 4.14, described as high meaning; it is oftentimes observed among college students. Likewise, the item, opportunity for self-expression, has a mean of 4.16, described as high, meaning that esthetic activity among college students is often observed. The result suggests that college students engage in esthetic activities as they find visual beauty appealing. This finding supports the study of Grabowska (2018), which showed that aesthetically pleasing areas for leisure activities fulfil an individual's preferences for elements that add to the space's attractiveness, encouraging them to use it for leisure activity. Students participate in aesthetically pleasing areas because they find it enjoyable and fulfilling. Similarly, the study of Liu and Da (2022) among college students in China revealed how different leisure activities impact happiness among college students in China. Participants in their research indicated aesthetic activities are one of the leisure activities that contribute to happiness. This implies that students who participate in aesthetic activities tend to feel happier.

Moreover, the study conducted by McGillivray and Frew (2002) revealed the importance of aesthetics in leisure activities. However, the results found that focusing too much on aesthetics in leisure activities can be problematic, as it may limit one's understanding and

appreciation of the diverse range of leisure experiences available. When people overly prioritize aesthetics, they might overlook activities that could be personally fulfilling or socially engaging but are not immediately visually attractive.

In addition, Simsek and Cevik (2020) discovered that aesthetic leisure activities are more than just sports. The study indicates that activities involve experiencing flow, appreciating visually attractive movements, specific moments within the activity, and the overall environmental qualities, all collectively representing the aesthetic dimensions of those leisure pursuits. This is supported by the study of Bae (2022), which revealed that students who possess esthetic enjoyment in sport-related activities allow an individual to feel satisfaction in their leisure time. This implies that people enjoy activities more and elevate their experiences in leisure activities when aesthetics is present or fulfilled.

Entertaining Activity

The dimension of entertaining activity has a category mean of 4.36, described as very high, which means that it is always observed. The mean ratings range from 4.23 to 4.45. For the items, college students found enjoyment in the entertaining aspects of leisure activities and felt positive when participating in leisure activities. Both have a mean of 4.45, described as very high, which means that entertaining activities are always observed among college students. The result indicates that college students often participate in entertaining activities because they derive enjoyment and experience positive feelings from them, motivating them to engage regularly. This finding supports Elizabeth's et al. (2019) study, where entertainment during leisure activities is essential for promoting balance and mental well-being in young adults.

Consequently, a study conducted at a university in a provincial city in Korea where, according to Mitsu and Ono (2021), college students preferably go out to eat with friends during their leisure time, with fewer students participating in entertainment activities. This could mean that focusing on socializing and spending time with friends during leisure may be more enjoyable and rewarding than engaging in entertainment activities. On the contrary, the study of Cheng et al. (2015) showed that convenience and accessibility are why students preferred going out to eat with friends rather than participating in entertainment activities, which may require additional planning, transportation, and cost.

Moreover, the study of Das and Barman (2019), using time duration as the basis, revealed that entertainment activities have a significant effect on the mental health of college students. This means that excessive engagement in leisure activities can negatively impact the mental health of college students. Further, Jimenez (2016) found that entertainment activities are the most common leisure activities among college students since such activities provide convenience and instant entertainment.

Exciting Activity

The dimension on exciting activity has a category mean of 4.41, described as very high, which means that it is always observed. The mean ratings range from 4.32 to 4.47. The item in which students placed a high value on the novelty and excitement of leisure activities has a mean of 4.47, which is described as very high, which means that exciting activities are always observed among college students. The result suggests that college students engage frequently in exciting activities because of the exciting aspect brought by these activities during free time, leading to regular participation. These results were supported by the study of Liu et al. (2020), which emphasizes the importance of excitement and novelty in sustaining engagement in leisure activities.

Significance of Relationship Between Grit, Situational Motivation, and Leisure Activity Participation

Results further imply a significant relationship exists between college students' leisure activity participation and grit of physical education and situational motivation in physical education. Here, the null hypothesis is rejected. Therefore, for every increase in college student's level of grit and situational motivation in physical education, there is a corresponding increase in their level of participation in leisure activity. On the contrary, if students' level of grit and situational motivation in physical education tend to decrease, then there is a corresponding decrease in their level of participation towards leisure activity.

The significant positive correlation between grit in physical education and leisure activity participation aligns with prior research, indicating that grit, characterized by perseverance and passion for long-term goals, is crucial in promoting sustained engagement in physical activities. For instance, Hodge et al. (2018) discovered a positive correlation between grit and engagement and academic success in university students, including participation in leisure sports. Furthermore, An, Sato, and Harada (2021) found that grit benefits amateur triathletes' leisure engagement and overall life satisfaction, suggesting that those with higher grit levels are more likely to engage in recreational activities regularly. The self-determination theory explains the positive relationship between situational motivation in physical education and leisure activity participation, which emphasizes intrinsic motivation for consistent participation in activities. According to research from Ryan and Deci (2020), people will continue participating in physical activity if they have intrinsic motivation driven by interest and enjoyment. This is consistent with the study of Ada et al. (2018), showing how situational motivation can be fostered in physical education classrooms by creating a supportive and encouraging environment. This improves flow experiences and motivates students to participate in leisure activities.

The results from the study of Kalajas-Tilga et al. (2020) support these findings, emphasizing the value of utilizing motivational techniques in physical education to inspire students to engage in physical activity. Thus, higher levels of physical activity, including leisure activities among college students, are linked to higher levels of autonomous motivation, a subset of situational motivation.

Furthermore, Barton-Weston et al. (2023) pointed out that theory-based physical exercise programs could encourage motivation among college students. Accordingly, this will result in a high level of participation in physical activities after school hours.

These significant findings of the relationship between grit, situational motivation, and leisure activity participation emphasize the need to create and support these qualities in physical education classes. To improve college students' general well-being and sense of fulfilment, educators should encourage students to participate more actively in leisure activities by fostering grit and situational motivation.

Significance of Influence Between Grit, Situational Motivation, and Leisure Activity Participation

It can also be gleaned from the result that the regression model statistically significantly predicts the outcome variable, students' participation in leisure activity. This is because the F value of 69.321 has a corresponding p-value of 0.000, which shows a significant result. The results imply that grit and situational motivation in physical education can be considered significant predictors. This means that there is a 0.452 degree of change in students' participation in leisure activity for every unit increase in grit in physical education, and there is also a 0.353 degree of change in students' participation in leisure activity for every unit increase in students' situational motivation.

These results support the findings from previous research. The study of Alan, Boneva, and Ertac (2016) demonstrated that grit-boosting interventions significantly improved students' perseverance and success in various activities, including leisure pursuits. Similarly, a study by Hodge, Wright, and Bennett (2018) discovered that grit improves academic performance and engagement when students eventually apply their persistent attitudes beyond academics and outside the classroom, where benefits are extended to leisure activities.

Moreover, situational motivation has been linked to improved student engagement and participation in physical education classes. According to Ada et al. (2018), flow experiences during physical education classes are facilitated by situational motivation and the perceived motivational climate, which encourage students to continue participating in activities outside of the classroom. This suggests that situational motivation plays a major role in leisure activity participation. Furthermore, this study supports the idea found in the study conducted by Kalajas-Tilga et al. (2020), where there is a direct relationship between intrinsic motivation in physical education and students' level of physical activity. This means that establishing and creating an environment that encourages students to participate in leisure activities can motivate multiple individuals to participate in leisure activities during their free time. Furthermore, in the study of Rodrigues et al. (2023), the role and value of situational motivation in physical activity engagement is important in enhancing participation in leisure activities.

The findings of this study would help physical education teachers and leisure activity advocates understand the needs and motivations behind students' engagement in leisure activities. The high level of leisure activity participation of college students found in this study may be maintained through additional programs developed by experts.

Conclusions

Based on the findings, the following conclusions were drawn;

The level of Grit among college students is high. This indicates that students generally display high levels of interest and effort towards both physical and academic aspects of their education, particularly in physical education.

College students exhibit very high levels of Situational Motivation in Physical Education. This suggests that students are highly motivated to participate in physical education due to intrinsic enjoyment and personal value placed on the activities.

The level of Leisure Activity Participation among college students is high. This implies that students are actively engaged in various leisure activities, with a particularly strong engagement in physical activities.

There are significant positive relationships between Grit, Situational Motivation, and Leisure Activity Participation. Higher levels of grit and situational motivation are associated with increased participation in leisure activities, highlighting the interconnected nature of these factors.

Grit and Situational Motivation are significant predictors of Leisure Activity Participation. The combined influence of these variables significantly explains a portion of the variance in leisure activity participation, indicating their important role in promoting active engagement in leisure activities.

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