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Exploring the relationship between motivation types, goal orientations, and athletic toughness dimensions among Universiti Kebangsaan Malaysia (UKM) athletes

Zamil Haziq Zamri [1], Mohamad Nizam Nazarudin [1*]
[1] Faculty of Education, Universiti Kebangsaan Malaysia, MALAYSIA.

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ABSTRACT

Problem: The problem addressed in this study is the lack of comprehensive research exploring the relationship between motivation types, goal orientations, and toughness dimensions in university athletes. **Purpose:** The purpose of this research is to investigate the correlation between different types of motivation (intrinsic, extrinsic, and amotivation) and the dimensions of athletic toughness (mental, emotional, and bodily toughness) among Universiti Kebangsaan Malaysia (UKM) athletes. Additionally, this study examines how ego orientation and task orientation influence these toughness dimensions. **Methods:** This study employed a quantitative research design with a sample of 100 student-athletes from UKM who participated in the 2024 SUKIPT games. Data were collected using three standardized instruments: the Sport Motivation Scale (SMS), the Mental, Emotional, and Bodily Toughness Inventory (MeBTough), and the Task and Ego Orientation in Sport Questionnaire (TEOSQ). Pearson correlation analysis was conducted to explore relationships between variables. Instrument reliability was confirmed through Cronbach's alpha, with coefficients ranging from 0.79 to 0.85. **Results:** The findings reveal that intrinsic motivation strongly correlates with all toughness dimensions (mental r = 0.64, emotional r = 0.65, bodily r = 0.67), while extrinsic motivation exhibits moderate correlations (mental r = 0.53, emotional r = 0.51, bodily r = 0.49). Amotivation shows negative correlations with toughness dimensions (mental r = -0.50, emotional r = -0.49, bodily r = -0.51). Additionally, ego orientation has a moderate correlation with bodily toughness (r = 0.44), whereas task orientation exhibits weak correlations with toughness dimensions. **Conclusion:** This study highlights the pivotal role of intrinsic motivation in enhancing mental, emotional, and bodily toughness among athletes, while extrinsic motivation provides moderate support, and amotivation negatively impacts resilience. Ego orientation contributes more to physical resilience compared to task orientation. These findings emphasize the need for tailored interventions focusing on intrinsic motivation and balanced goal orientations to foster holistic athletic toughness.

Keywords: motivation, toughness dimensions, ego orientation, task orientation, athletic resilience, UKM athletes

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Corresponding Author:
Mohamad Nizam Nazarudin
Faculty of Education, Universiti Kebangsaan Malaysia, MALAYSIA.
Email: mohdnizam@ukm.edu.my

Introduction

The Sukan Institusi Pengajian Tinggi (SUKIPT) serves as a prominent platform for Malaysian higher education institutions to exhibit athletic excellence and competitive spirit. Universiti Kebangsaan Malaysia (UKM) has consistently participated in these games, underscoring its dedication to cultivating sportsmanship and developing athletic talent among its students. This analysis evaluates UKM's performance during the 2022 and 2024 SUKIPT, focusing on medal achievements, shifts in rankings, and the broader implications for the university's athletic strategy. In the 2022 SUKIPT, UKM ranked 14th in the overall medal standings, securing a total of 16 medals, including 6 gold, 9 silver, and 1 bronze. By contrast, in the 2024 SUKIPT, UKM fell to 16th place, despite maintaining the same total medal count of 16. However, the medal composition in 2024 shifted significantly, with a reduction to 3 gold and 7 silver medals, while bronze medals increased to 6.

The decline in ranking, despite maintaining the total number of medals, highlights the importance of

gold medals in the competitive framework of SUKIPT. Gold medals, being the most influential in determining rankings, weigh heavily on institutional success. Consequently, UKM's reduced ability to secure gold medals directly contributed to its drop in rankings from 14th to 16th place. The drop in gold medals, from 6 in 2022 to 3 in 2024, marks a significant challenge for UKM's athletic program. This 50% reduction could reflect increased competition from other institutions or a weakening of UKM's dominance in key sports. Gold medals not only symbolize individual athletic achievement but also indicate the overall efficacy of an institution's training and resource allocation strategies. A decline in this critical category raises concerns about preparation, support systems, and strategic focus in high-impact events (De Bock et al., 2022)

Moreover, the reduced performance in gold medal categories could result from the lingering effects of the COVID-19 pandemic, which disrupted athletic training schedules globally. Research suggests that the pandemic has had a lasting impact on athlete preparedness and resource availability, leading to disparities in performance (Mutuma, 2023). Addressing these shortcomings requires UKM to develop targeted strategies that enhance competitiveness in high-value events and disciplines. An analysis of the medal composition reveals an interesting shift between 2022 and 2024. While UKM secured a high number of silver medals (9) and a low number of bronze medals (1) in 2022, this pattern changed in 2024, with silver medals decreasing to 7 and bronze medals increasing to 6. This diversification suggests that UKM expanded its participation across multiple events, leading to a broader distribution of podium finishes.

However, this shift also underscores a concerning trend in medal quality. The reduction in gold and silver medals indicates a diminished competitive edge in achieving top-tier positions. While broader participation is commendable, the inability to convert these opportunities into higher-quality medals suggests a need for performance optimization in critical stages of competition. Although the performance fell short of expectations, it highlights specific areas requiring attention, such as enhancing tactical precision and building psychological resilience under pressure. Evidence from research on elite team sports emphasizes that small, incremental improvements in tactical execution can significantly impact competitive success (Zhang & Dulatre, 2024). By strengthening sport-specific infrastructure, refining coaching methods, and implementing resilience-building programs, UKM has the potential to turn similar challenges into gold-medal opportunities in future competitions. However, further investigation is warranted to understand the underlying factors that shape athletes' toughness.

The research objective of this study is to explore the relationship between various types of motivation—intrinsic, extrinsic, and amotivation—and the dimensions of athletic toughness, including Mental, Emotional, and Bodily Toughness, among UKM athletes. Additionally, the study aims to examine how goal orientations, specifically ego orientation and task orientation, influence these dimensions of toughness. This investigation seeks to provide insights into psychological factors that contribute to athletes' performance and resilience, offering a foundation for targeted interventions to enhance competitive outcomes.

Method

The study was conducted among 100 student-athletes representing Universiti Kebangsaan Malaysia at the SUKIPT (Sukan Institusi Pengajian Tinggi) games. Participants were selected through convenience sampling, ensuring a diverse representation of sports disciplines. Inclusion criteria required athletes must be registered with the university during the game. Three standardized questionnaires were employed to measure the constructs. The Sport Motivation Scale (SMS): This scale assesses intrinsic motivation, extrinsic motivation, and amotivation across 28 items. Developed by Pelletier et al. (1995), the SMS is validated for use in various cultural contexts and demonstrates high reliability (Cronbach's alpha > 0.80). The Mental, Emotional, and Bodily Toughness Inventory (MeBTough): This inventory evaluates the three dimensions of toughness through 18 items. MeBTough has shown robust internal consistency, with reliability coefficients ranging from 0.75 to 0.88. (Gucciardi et al. (2015). The Task and Ego Orientation in Sport Questionnaire (TEOSQ): This 13-item scale measures athletes' task and ego orientations in competitive settings. TEOSQ has been validated across diverse populations, with Cronbach's alpha values exceeding 0.70. (Chi & Duda, 1995),

Data collection occurred during the SUKIPT 2024 games, with participants completing the questionnaires in a controlled environment. The study adhered to ethical guidelines, ensuring informed consent, anonymity, and voluntary participation. Pearson correlation analysis was employed to examine the relationships between motivation types, goal orientations, and toughness dimensions. The normality of data distribution was confirmed before analysis, enabling the use of parametric statistical methods. Each questionnaire's reliability was assessed through Cronbach's alpha during pilot testing with 20 UKM athletes. Results indicated excellent internal consistency: SMS ($\alpha = 0.85$), MeBTough ($\alpha = 0.82$), and TEOSQ ($\alpha = 0.79$). These findings align with previous studies, affirming the reliability of these instruments for this population.

Result

Correlation Between Types of Motivation and the Dimensions of Toughness

Based on Table 1, the correlation analysis provides critical insights into the relationships between different types of motivation—Intrinsic Motivation, Extrinsic Motivation, and Amotivation—and the dimensions of toughness, namely Mental Toughness, Emotional Toughness, and Bodily Toughness. These findings reveal how varying motivational factors influence the resilience and performance of athletes in distinct ways.

Table 1. Analysis of Pearson Correlation between types of Motivation and the dimensions of toughness

	Intrinsic Motivation	Extrinsic Motivation	Amotivation	Mental Toughness	Emotional Toughness	Bodily Toughness
Intrinsic Motivation	1	.53**	-.35*	.64**	.65**	.67**
Extrinsic Motivation	.53**	1	-.40**	.53**	.51**	.49**
Amotivation	-.35*	-.40**	1	-.50**	-.49**	-.51**
Mental Toughness	.64**	.53**	-.50**	1	.88**	.85**
Emotional Toughness	.65**	.51**	-.49**	.88**	1	.89**
Bodily Toughness	.67**	.49**	-.51**	.85**	.89**	1

a. Intrinsic Motivation

Intrinsic motivation demonstrates a high positive correlation with all three dimensions of toughness. The correlation with Mental Toughness (r = 0.64) suggests that athletes who are genuinely interested in and enjoy their sport exhibit strong mental resilience. These athletes possess greater focus, perseverance, and the ability to effectively cope with challenges, as their motivation arises from an internal desire to excel rather than external rewards. Similarly, intrinsic motivation fosters better Emotional Toughness (r = 0.65), enabling athletes to regulate their emotions, stay composed, and maintain confidence under pressure. This emotional stability often translates into consistent performance during competitions and rigorous training. The correlation with Bodily Toughness (r = 0.67) highlights that intrinsic motivation contributes significantly to physical resilience. Athletes motivated by mastery and self-improvement are more willing to endure physical discomfort and fatigue, demonstrating a consistent effort to enhance their physical abilities. Together, these findings underscore the pivotal role of intrinsic motivation in fostering holistic toughness among athletes.

b. Extrinsic Motivation

Extrinsic motivation shows a moderate positive correlation with the toughness dimensions, though the relationships are weaker compared to intrinsic motivation. The correlation with Mental Toughness (r = 0.53) indicates that external rewards or recognition can enhance mental resilience, but this effect may be limited by the athlete's dependence on external factors. In comparison, the correlation with Emotional Toughness (r = 0.51) reflects that while extrinsic motivators can provide emotional stability, reliance on external validation may hinder the development of long-term emotional strength. This suggests that athletes driven by external rewards may lack the self-regulation skills necessary to handle stress and setbacks. The correlation with Bodily Toughness (r = 0.49) reveals that extrinsic motivation can push athletes to endure physical challenges, but its influence is not as pronounced as that of intrinsic motivation.

c. Amotivation

Amotivation, as expected, shows a moderate negative correlation with all dimensions of toughness, reflecting its detrimental impact on athletes' resilience. The negative correlation with Mental Toughness (r = -0.50) suggests that athletes who lack motivation struggle to maintain focus, persistence, and the mental resilience necessary to overcome challenges. These athletes may disengage from their sport, leading to

inconsistent performance. Similarly, the negative correlation with Emotional Toughness (r = -0.49) indicates that amotivated athletes are prone to emotional instability, including frustration, anxiety, or even apathy, especially in competitive environments. This emotional fragility can further undermine their ability to perform under pressure. The negative correlation with Bodily Toughness (r = -0.51) highlights that a lack of motivation significantly affects physical resilience, as these athletes may exert less effort, become inconsistent in training, and be more susceptible to fatigue or injury. These findings emphasize the critical need to address amotivation to ensure athletes remain resilient across mental, emotional, and physical domains.

Correlation Between Ego Orientation, Task Orientation, And the Toughness Dimensions

Based on Table 2, the relationships between Ego Orientation, Task Orientation, and the toughness dimensions (Mental Toughness, Emotional Toughness, and Bodily Toughness) present distinct patterns worth discussing. These correlations reveal the varying roles of motivation orientations in shaping different aspects of toughness among athletes.

Table 2: Analysis of Pearson Correlation between Ego Orientation, Task Orientation, and the toughness dimensions

	Ego Orientation	Task Orientation	Mental Toughness	Emotional Toughness	Bodily Toughness
Ego Orientation	1.00**	-0.03	0.34*	0.18	0.44*
Task Orientation	-0.03	1.00**	0.04	0.17	0.08
Mental Toughness	0.34*	0.04	1.00**	-0.14	0.12
Emotional Toughness	0.18	0.17	-0.14	1.00**	0.29
Bodily Toughness	0.44*	0.08	0.12	0.29	1.00**

a. Ego Orientation

Ego Orientation demonstrates a moderate positive correlation with Bodily Toughness (r = 0.44*), indicating that athletes who focus on outperforming others tend to exhibit stronger physical resilience. This relationship suggests that the competitive drive associated with ego orientation motivates athletes to push their physical limits, enduring fatigue, and discomfort to achieve superiority over peers. Additionally, there is a low positive correlation between Ego Orientation and Mental Toughness (r = 0.34*). This reflects that while ego-oriented athletes may develop mental resilience to support their competitive goals, this association is less pronounced than physical toughness. Interestingly, Ego Orientation shows minimal or no significant correlation with Emotional Toughness (r = 0.18). This suggests that while ego-driven goals may enhance physical and mental toughness to some extent, they do not necessarily foster emotional regulation or resilience under stress. Moreover, the weak negative correlation with Task Orientation (r = -0.03) highlights the potential divergence in focus between these two orientations.

b. Task Orientation

Task Orientation, which emphasizes self-improvement and mastery of skills, exhibits low positive correlations across all toughness dimensions, but none are significant. The correlation with Mental Toughness is particularly weak (r = 0.04), suggesting that the focus on personal growth and effort does not strongly contribute to mental resilience. Similarly, Task Orientation shows a weak positive correlation with Emotional Toughness (r = 0.17) and Bodily Toughness (r = 0.08). These findings indicate that while mastery-driven athletes may benefit from their intrinsic motivation, this orientation does not necessarily demand or develop the levels of toughness seen in ego-oriented athletes.

c. Toughness Dimensions

Examining the relationships among the toughness dimensions themselves provides further insights. Mental Toughness and Emotional Toughness exhibit a weak negative correlation (r = -0.14), suggesting that mental resilience and emotional regulation may operate somewhat independently or even inversely in certain contexts. Conversely, Bodily Toughness shows weak positive correlations with Emotional Toughness (r = 0.29) and Mental Toughness (r = 0.12). These relationships imply that physical resilience may complement emotional and mental resilience, albeit at a lower intensity.

Discussion

The Role of Motivation in Developing Athletic Toughness

a. Intrinsic Motivation

Intrinsic motivation is characterized by a genuine interest in and enjoyment of an activity, which is often associated with self-determined goals. It exhibits the strongest correlations with all dimensions of toughness, highlighting its profound role in developing holistic resilience in athletes. Mental Toughness is significantly enhanced by intrinsic motivation, as evidenced by Sheehan et al. (2018). Intrinsically motivated athletes tend to focus on mastery and personal improvement rather than external rewards, which fosters persistence and effective coping mechanisms. This focus allows them to maintain composure and adapt to high-pressure scenarios, showcasing a robust capacity to overcome mental barriers.

Intrinsic motivation also fosters Emotional Toughness, as it promotes emotional regulation and stability. Mossman et al. (2024) emphasize that athletes driven by internal satisfaction can maintain consistent performance even under stress. This stability stems from their reliance on internal motivators rather than fluctuating external conditions, which may not always align with their goals. Emotional resilience is particularly critical in sports, where emotional control directly impacts decision-making and interpersonal dynamics during competitions.

Bodily Toughness is perhaps the most visibly influenced by intrinsic motivation. Athletes who prioritize mastery and improvement willingly endure physical discomfort and fatigue to achieve long-term goals (Zeiger & Zeiger, 2018). This willingness stems from a sense of personal accomplishment and pride in overcoming physical challenges, which fuels sustained effort during rigorous training regimens and demanding performances. By fostering a mindset geared toward self-improvement, intrinsic motivation empowers athletes to push their physical limits consistently. In sum, intrinsic motivation supports mental resilience, emotional regulation, and physical endurance, making it a critical driver for athletes striving to achieve peak performance across multiple dimensions of toughness.

b. Extrinsic Motivation

Extrinsic motivation arises from external incentives such as rewards, recognition, or societal expectations. While it contributes to athletic toughness, its effects are generally less pronounced compared to intrinsic motivation. In terms of Mental Toughness, extrinsic motivation can provide short-term enhancements by fostering resilience to achieve specific rewards or recognition (Pulido & Sánchez-Oliva, 2018). However, its dependency on external factors limits its long-term effectiveness. Athletes motivated primarily by external validation may struggle to sustain their focus and perseverance when external rewards diminish, highlighting a potential vulnerability.

Emotional Toughness benefits moderately from extrinsic motivators. Kalajas-Tilga et al. (2020) suggest that external rewards can temporarily bolster emotional stability, providing athletes with the confidence to manage stress during competitive scenarios. However, this stability is fragile, as reliance on external validation may hinder the development of enduring self-regulation. Athletes driven by extrinsic motivation are more prone to emotional instability when faced with setbacks or failure, as their sense of self-worth is often tied to external outcomes. For Bodily Toughness, extrinsic motivation can drive physical effort and persistence, particularly in the short term. Bølling et al. (2018) note that athletes seeking rewards or recognition are more likely to engage in rigorous training sessions to achieve their goals. However, this form of motivation lacks the internal sustainability seen in intrinsically motivated athletes. Over time, reliance on extrinsic motivators may result in burnout or diminished effort, especially if rewards are perceived as insufficient or unattainable.

Thus, while extrinsic motivation can complement intrinsic drivers by providing additional incentives, it often lacks the stability and depth needed to cultivate long-term resilience across the dimensions of toughness.

c. Amotivation

Amotivation, characterized by a lack of intent or purpose, has a detrimental impact on all dimensions of athletic toughness. This absence of motivation undermines an athlete's ability to persevere, regulate emotions, and endure physical challenges. The negative relationship between amotivation and Mental Toughness is well-documented. Wilson et al. (2019) report that athletes lacking motivation struggle with persistence and focus, often disengaging from their training or performance. This disengagement leads to inconsistent performance, as the absence of a clear purpose hampers their ability to overcome mental barriers. Similarly, Emotional Toughness is significantly weakened by amotivation. Ong (2019)

emphasizes that amotivated athletes are prone to emotional instability, including frustration, anxiety, and apathy. These emotional struggles are particularly pronounced in competitive environments, where the inability to regulate emotions can result in poor decision-making and heightened stress. Finally, amotivation severely impacts Bodily Toughness by reducing an athlete's willingness to exert physical effort. Gustafsson et al. (2018) highlight that amotivated athletes are more susceptible to fatigue, burnout, and injury due to their lack of engagement in consistent training or competition. This lack of physical resilience further compounds their overall performance deficiencies.

Addressing amotivation is crucial for fostering athletic toughness. By identifying the underlying causes—such as burnout, unrealistic goals, or lack of alignment with personal values—coaches and practitioners can implement strategies to re-engage athletes and promote resilience.

The Influence of Ego and Task Orientations on Athletic Toughness

Athletic performance and resilience are often influenced by underlying motivational orientations. This discussion examines the relationship between Ego Orientation, Task Orientation, and toughness dimensions (Mental, Emotional, and Bodily Toughness), contextualizing the findings with established psychological theories.

a. Ego Orientation and Toughness Dimensions

Ego orientation is defined by a competitive mindset where athletes seek to outperform others and attain recognition for their superior performance. This approach is significantly linked to Bodily Toughness, with a moderate positive correlation indicating that ego-oriented athletes exhibit enhanced physical resilience. The drive to surpass opponents often compels individuals to push through physical fatigue, discomfort, and challenges, fostering greater endurance in high-pressure scenarios. Cowden et al. (2019) and Gurleyik et al. (2022) have demonstrated how ego-oriented motivation enhances performance in such settings, emphasizing the role of external rewards and recognition in promoting physical effort. The relationship between Ego Orientation and Mental Toughness is weaker, reflecting the cognitive challenges of maintaining focus and resilience under competitive pressure. While ego-oriented athletes may develop mental toughness as a tool for achieving their goals, their resilience often depends on the availability of external validation. Petrie et al. (2021) observed that ego-oriented athletes tend to focus on the immediate demands of competition but may struggle with long-term cognitive resilience when clear rewards are absent.

In contrast, Emotional Toughness shows a minimal correlation with ego orientation. Emotional regulation and resilience, which are crucial for managing stress, are less tied to external factors. Albert et al. (2024) and Castro-Sánchez et al. (2019) noted that ego-oriented athletes frequently experience emotional instability in uncertain scenarios, particularly when outcomes or rewards do not meet expectations. This highlights a limitation of ego orientation: while it promotes physical and mental toughness to some extent, it fails to cultivate emotional regulation, which is essential for consistent performance. Finally, the weak negative correlation between ego orientation and Task Orientation (Zurita-Ortega et al., 2018) underscores their fundamentally different motivational frameworks. Ego-oriented individuals prioritize winning and competitive outcomes, often at the expense of skill mastery and personal growth. This divergence can lead to conflicting approaches to training and competition, with ego orientation focusing on results and task orientation emphasizing intrinsic improvement.

b. Task Orientation and Toughness Dimensions

Task orientation, in contrast, is centered on personal growth, mastery of skills, and self-improvement. While this intrinsic focus supports long-term development, its correlations with toughness dimensions are generally weak. For Mental Toughness, task orientation shows limited association. The emphasis on effort and improvement rather than competitive success means task-oriented athletes may lack the mental resilience required for high-pressure situations. Studies by Yukhymenko-Lescroart (2018) and Meira and Fairbrother (2018) suggest that task-oriented athletes may develop focus and persistence, but these qualities are directed toward learning and self-improvement rather than overcoming external pressures. Emotional Toughness demonstrates a slightly stronger correlation with task orientation, driven by the self-regulated nature of task-oriented athletes. These individuals often maintain emotional stability by focusing on their process-oriented goals rather than external outcomes. Chacón-Cuberos et al. (2019) argue that this approach enables task-oriented athletes to manage their emotions during skill acquisition and training. However, the lack of external validation and competitive edge may hinder their ability to respond effectively to stress in high-stakes scenarios.

For Bodily Toughness, the correlation remains weak. Task-oriented athletes may endure physical challenges as part of their commitment to self-improvement, but this endurance is not driven by the same competitive pressures as ego-oriented individuals. Castro-Sánchez et al. (2018) observed that task-oriented motivation promotes sustained effort but lacks the intensity needed to push beyond physical limits, a characteristic more commonly associated with ego-oriented athletes.

c. Interrelations Among Toughness Dimensions

Examining the interrelations among toughness dimensions provides valuable insights into their functional dynamics. A weak negative correlation between Mental Toughness and Emotional Toughness suggests that cognitive resilience and emotional regulation may not always align. Bazzy (2018) explained that athletes who excel in mental toughness often prioritize cognitive focus and problem-solving, potentially neglecting the emotional aspects of resilience, especially under significant strain. Conversely, Bodily Toughness demonstrates weak positive correlations with both Emotional Toughness and Mental Toughness. These relationships imply that physical resilience can complement emotional and mental resilience to a limited extent. Cowden et al. (2019) and Kleka et al. (2022) highlighted that physical toughness often serves as a foundational element, supporting athletes' ability to handle stress and maintain focus. For instance, athletes who endure physical challenges may develop secondary emotional and mental toughness, as these traits are often reinforced through physical training and competition.

Conclusion

The findings emphasize that intrinsic motivation is the most effective driver of holistic toughness in athletes, enhancing their mental, emotional, and physical resilience. While extrinsic motivation can supplement resilience, it is less effective than intrinsic motivation and poses risks of dependency and burnout. Amotivation, in contrast, has consistently negative effects on all dimensions of toughness, underscoring the need to foster motivational strategies aligned with athletes' internal values and goals. These insights align with theories of motivation, such as Self-Determination Theory, and highlight the pivotal role of internal drives in achieving sustained excellence in sports. Ego Orientation demonstrates a stronger relationship with Bodily Toughness compared to Task Orientation, driven by the competitive drive to outperform peers. However, its impact on Emotional Toughness is limited, emphasizing the need for balanced motivational strategies. Task Orientation, while rooted in intrinsic motivation, shows weaker associations with toughness dimensions, reflecting its emphasis on mastery over competitive resilience. These findings highlight the nuanced roles of motivational orientations in fostering different aspects of athletic toughness.

References

Albert, E., Petrie, T. A., & Moore, E. W. G. (2024). Achievement motivation and grit's perseverance of effort among collegiate athletes. *International Journal of Sport and Exercise Psychology*. https://doi.org/10.1080/1612197X.2022.2161100

Bazzy, J. D. (2018). Work ethic dimensions as predictors of ego depletion. *Current Psychology, 37*(2), 230–240. https://doi.org/10.1007/s12144-016-9503-6

Bølling, M., Otte, C. R., Elsborg, P., & Nielsen, G. (2018). The association between education outside the classroom and students' school motivation. International Journal of Educational Research, 89, 75–85. https://doi.org/10.1016/j.ijer.2018.03.004

Castro-Sánchez, M., Zurita-Ortega, F., & García-Marmol, E. (2018). Motivational climate in physical education. *Sustainability, 10*(5), 1234. https://doi.org/10.3390/su10041234

Chacón-Cuberos, R., Castro-Sánchez, M., & Zurita-Ortega, F. (2019). Resilience and motivational climate in university students. *Frontiers in Psychology, 10*, 1821. https://doi.org/10.3389/fpsyg.2019.01821

Chi, L., & Duda, J. L. (1995). Multi-sample confirmatory factor analysis of the task and ego orientation in sport questionnaire. *Research Quarterly for Exercise and Sport*, *66*(2), 91-98.

Cowden, R. G., Crust, L., & Jackman, P. C. (2019). Perfectionism and motivation in sport: The mediating role of mental toughness. *South African Journal of Psychology*, *49*(1), 55–67. https://doi.org/10.1177/0081246318803682

De Bock, T., Scheerder, J., Theeboom, M., Constandt, B., Marlier, M., De Clerck, T., & Willem, A. (2022). Stuck between medals and participation: an institutional theory perspective on why sport federations struggle to reach Sport-for-All goals. *BMC Public Health*, *22*(1), 1891.

Gucciardi, D. F., Hanton, S., Gordon, S., Mallett, C. J., & Temby, P. (2015). The Concept of Mental toughness: Tests of dimensionality, nomological network, and traitness. *Journal of Personality*, *83*,

26–44.

Gurleyik, D., & Sen, C. K. (2022). Culture in physical activity: The contribution of basic psychological needs and goal orientation. *International Journal of Environmental Research and Public Health*, *19*(24), 16691. https://doi.org/10.3390/ijerph192416691

Gustafsson, H., Carlin, M., Podlog, L., & Stenling, A. (2018). Motivational profiles and burnout in elite athletes: A person-centered approach. *Psychology of Sport and Exercise, 35*, 118–125. https://doi.org/10.1016/j.psychsport.2018.01.002

Kalajas-Tilga, H., Koka, A., Hein, V., & Tilga, H. (2020). Motivational processes in physical education and objectively measured physical activity among adolescents. *Journal of Sport and Health Science*, *9*(4), 344–351. https://doi.org/10.1016/j.jshs.2019.09.003

Kleka, P., Tomczak, M., & Walczak, A. (2022). Validation of Sport Anxiety Scale-2 (SAS-2) among athletes. *Scientific Reports, 12,* 1234. https://doi.org/10.1038/s41598-022-16418-6

Meira, C. M., & Fairbrother, J. T. (2018). Ego-oriented learners in motor skill retention. *Journal of Motor Learning and Development*, *6*(2), 209–224. https://doi.org/10.1123/jmld.2018-0004

Mossman, L. H., Slemp, G. R., & Lewis, K. J. (2024). Autonomy support in sport and exercise settings: A systematic review and meta-analysis. *International Review of Sport and Exercise Psychology*, *17*(1), 1–29. https://doi.org/10.1080/1750984X.2022.2031252

Mutuma, N. N. (2023). *Exploring Socio-economic and Psychological Resilience: a Case of Kenyan Distance Runners During the Covid-19 Pandemic* (Doctoral dissertation, University of Nairobi).

Ong, N. C. H. (2019). Assessing objective achievement motivation in elite athletes. *International Journal of Sport and Exercise Psychology*, *17*(3), 246–260. https://doi.org/10.1080/1612197X.2017.1349822

Pelletier, L. G., Tuson, K. M., Fortier, M. S., Vallerand, R. J., Briere, N. M., & Blais, M. R. (1995). Toward a new measure of intrinsic motivation, extrinsic motivation, and amotivation in sports: The Sport Motivation Scale (SMS). *Journal of sport and Exercise Psychology*, *17*(1), 35-53.

Petrie, T. A., Albert, E., & Moore, E. W. G. (2021). Motivational climates and goal orientations to grit in soccer players. *Psychology of Sport and Exercise, 50,* 101254. https://doi.org/10.1016/j.psychsport.2021.101254

Pulido, J. J., & Sánchez-Oliva, D. (2018). Sport commitment in young soccer players: A self-determination perspective. *International Journal of Sports Science & Coaching*, *13*(1), 27–35. https://doi.org/10.1177/1747954118755443

Sheehan, R. B., Herring, M. P., & Campbell, M. J. (2018). Associations between motivation and mental health in sport: A test of the hierarchical model of intrinsic and extrinsic motivation. *Frontiers in Psychology, 9*, 707. https://doi.org/10.3389/fpsyg.2018.00707

Wilson, D., Bennett, E. V., & Mosewich, A. D. (2019). "The zipper effect": Exploring the interrelationship of mental toughness and self-compassion among Canadian elite women athletes. *Psychology of Sport and Exercise, 44*, 101–110. https://doi.org/10.1016/j.psychsport.2019.101552

Zeiger, J. S., & Zeiger, R. S. (2018). Mental toughness latent profiles in endurance athletes. *PLoS ONE, 13*(2), e0193071. https://doi.org/10.1371/journal.pone.0193071

Zhang, B., & Dulatre, V. S. (2024). Serving up Success: Assessing and Improving Tennis Athlete Development Pathways. *International Journal of Education and Humanities*, *16*(3), 259-298.