



## Social and organizational resources' effect on athletes' mental toughness: investigating the role of personal psychological resources

*Efecto de los recursos sociales y organizacionales en la fortaleza mental de los atletas: investigando el papel de los recursos psicológicos personales*

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### Abstract

**Introduction:** Although several studies have explored the development and dynamics of mental toughness, there is a notable scarcity of research addressing these aspects from a resource-based perspective.

**Objective:** The study aimed to investigate the role of personal psychological resources in the relationship of social and organizational resources on mental toughness in secondary school varsity athletes. Through the lens of the Conservation of Resources (COR) theory, this study investigates the impact of external resources such as support from family, friends, coaches, and organizations on internal psychological attributes like hope, efficacy, resilience, and optimism, which together contribute to the development of mental toughness.

**Methodology:** A total of 644 secondary school varsity players from Northern Mindanao, Philippines, were involved in the study.

**Results:** The results showed that personal psychological resources served as a mediator in the relationship of social and organizational resources on the mental toughness of student-athletes. Specifically, athletes who reported receiving more resources from their social network and organizations exhibited increased personal psychological resources (i.e., hope, efficacy, resiliency, optimism) of which contributed to enhanced mental toughness.

**Conclusions:** This study emphasizes the significance of a supportive environment in cultivating athletes' mental toughness and provides practical implications for sports organizations, educators, and coaches in creating interventions that improve personal psychological resources, and ultimately, mental toughness.

### Keywords

Mental toughness; organizational resources; personal psychological resources; social resources.

### Resumen

**Introducción:** Aunque varios estudios han explorado el desarrollo y la dinámica de la fortaleza mental, existe una notable escasez de investigaciones que aborden estos aspectos desde una perspectiva basada en los recursos.

**Objetivo:** El estudio tuvo como objetivo investigar el papel de los recursos psicológicos personales en la relación entre los recursos sociales y organizacionales con la fortaleza mental en atletas de secundaria. A través del lente de la teoría de Conservación de Recursos (COR), esta investigación examina el impacto de los recursos externos, como el apoyo de la familia, amigos, entrenadores y organizaciones, en los atributos psicológicos internos como la esperanza, la eficacia, la resiliencia y el optimismo, los cuales contribuyen al desarrollo de la fortaleza mental.

**Metodología:** En el estudio participaron un total de 644 jugadores de equipos deportivos escolares de secundaria de la región de Mindanao del Norte, Filipinas.

**Resultados:** Los resultados mostraron que los recursos psicológicos personales actuaron como mediadores en la relación entre los recursos sociales y organizacionales y la fortaleza mental de los atletas estudiantes. Específicamente, los atletas que informaron recibir más recursos de su red social y organizaciones mostraron un aumento en sus recursos psicológicos personales (esperanza, eficacia, resiliencia y optimismo), lo que contribuyó a una mayor fortaleza mental.

**Conclusiones:** Este estudio enfatiza la importancia de un entorno de apoyo en el desarrollo de la fortaleza mental de los atletas y proporciona implicaciones prácticas para organizaciones deportivas, educadores y entrenadores en la creación de intervenciones que mejoren los recursos psicológicos personales y, en última instancia, la fortaleza mental.

### Palabras clave

Fortaleza mental; recursos organizacionales; recursos psicológicos personales; recursos sociales.

## Introduction

Multiple studies indicate that mentally tough athletes tend to sustain elevated levels of personal performance during competition (Ramolale et al., 2021; Hardy, et al., 2013), achieve goals despite adversities and pressures (Gucciardi et al., 2020; Bédard -Thom et al., 2020), control distractions and focus on new information related to current goals (Denovan et al., 2022; Dewhurst et al., 2012), and sustain a high level of optimism (Brace et al., 2020; Nicholls et al., 2016). The recognition on the importance of mental toughness in athletes instigated the increase of studies examining its precursors, processes, and mechanisms. While numerous studies have explored the development and enhancement of mental toughness, with existing literature investigating its relationship with dispositional traits, coaching styles, motivation, and resilience training (Stamatis et al., 2020; Liew et al., 2019; Ajilchi et al., 2021). However, to the authors' knowledge, few studies have examined these psychological dynamics through a resource-based theoretical lens. This study aims to address the existing gap by employing the Conservation of Resources theory to examine how external resources, specifically social and organizational resources, influence personal psychological resources and, ultimately, enhance mental toughness in athletes. Through the lens of the Conservation of Resources (COR) theory, this study contends that social and organizational resources (e.g., support from family, friends, coaches, and institutions) play a critical role in building personal resources (i.e., hope, self-efficacy, resiliency, and optimism), and that this resource-building process contributes meaningfully to the development of mental toughness.

### *Development of mental toughness in the lens of COR theory*

While there have been various ways of construing mental toughness, there is a common understanding in the literature that this refers to a multidimensional state or trait characterized by self-belief, the ability to rebound after failure (resilience), persistence or refusal to quit, coping effectively with adversity and pressure, and returning concentration in the face of many potential distractions (Low et al., 2022; Liew et al., 2019). Madigan and Nicholls (2017) assert that mental toughness comprises a set of experientially cultivated and intrinsic sport-specific and general values, attitudes, behaviors, and emotions that affect how an individual approaches, responds to, and evaluates both negative and positive pressures, challenges, and adversities in order to consistently attain their goals. The emerging construct of mental toughness is described as a collection of positive psychological attributes that propels individuals in the context of sports to persist in achieving goals and obtaining optimal growth despite adverse conditions and circumstances.

Interestingly, increasing studies have shown that athletes' mental toughness tends to be associated with better sports performance (e.g., higher mindfulness; increased confidence; improved physical endurance), more effective in dealing and coping with stressful situation (e.g., reduced sports dropout; enhanced stress management skills; recover more quickly from setbacks), higher motivation (e.g., derived more enjoyment from sports; increases enthusiasm; sustained drive towards goals), better relationship with peer and coaches (e.g., improve personal relationships; emotional support; stronger team cohesion), greater emotional regulation (e.g., better anger management; decreased anxiety levels; increased emotional resilience), better focus and lessen distraction (e.g., enhanced concentration; improved attention control; reduced mind wandering), and higher overall wellbeing (e.g., improved life satisfaction, better mental health, enhanced physical health). The tremendous impact of mental toughness to athletes and with the growing understanding that it can be acquired and developed have resulted in the increasing theoretical and pragmatic interest in the mechanism that would explain its etiology and progress.

### *Mental Toughness in the lens of COR theory*

The COR theory starts with the notion that individuals consistently seek, maintain, and generate resources within their environment (Henriksen & Stambulova, 2023; Hobfoll et al., 2018; Hobfoll et al., 2016). These resources act as mitigation against the challenging environment demands and assist individuals in their optimal functioning (Hobfoll et al., 2018). However, when individuals experience a deficiency, loss, or threat of loss of resources, they are likely to experience heightened psychological distress (Hobfoll et al., 2012; Petrie et al., 2014). Alternately, when they receive sufficient resources (i.e., family, friends), they are likely to have lower emotional distress (Jolly et al., 2020; Sullivan et al., 2020), better well-being (Katagami & Tsuchiya, 2016; Siedlecki et al., 2014), and improving sense of self (Li et al., 2023; Wendling et al., 2017).



There are basic tenets in COR that could be anchored in how resources increase mental toughness. The first tenet pertains to the motion of resource caravan passageways. A resource passageway refers to an environment or ecological condition that operationalizes resources of the individuals to achieve the desired outcome (Nimmi et al., 2022). Hobfoll et al. (2018) considers the passageway to be vital as it could either foster and nurture or limit and block resource creation and sustenance. For instance, supportive attitude and emotional closeness with family, relatives, and friends are an important resource if the social condition (i.e., culture) and environmental atmosphere (i.e., organizational climate) value the importance of family and interpersonal relationship (Hobfoll, 2018; Sheridan & Garbacz, 2021; Kim et al., 2020).

In the context of this study, social relationships are expected to be valued social resources given that Filipinos possess a collectivist cultural orientation where they construe their close and significant social network to be part of their self-definition (Kramers et al., 2022; Dohme et al., 2020). Thus, this collectivist cultural environment becomes a resource passageway responsible for the creation and maximization of social and organizational resources. The second tenet includes the notion of resource caravans. Resource caravan refers to the notion that resources are not presented piecemeal, but rather they are developed and associated in aggregate (Hobfoll, 2011; Hobfoll et al., 2016). This implies that resources travel in packs, are not existing in isolation, and are likely affecting each other. The interwinning of resources suggests that heightening or lowering of resources could have salient influence to other resources. Expositorily, athletes who have social resources (i.e., support from family, friends, teammates, coaches) and backed by organizational resources (e.g., financial support, facilities, training, sports equipment) are likely to build and increase personal psychological resources. Conversely, it could be stipulated that those with lack or poor social and organization resources may likely have less personal resources.

Finally, the last tenet involves resource gain spirals and loss cycles. COR theory proposes that people who have plenty of resources will have more opportunities for resource gain (i.e., gain spiral) while those who already have fewer resources will be more susceptible to experiencing resource loss (i.e., loss cycles). Although not explicitly construed as resources, numerous studies have indicated that athletes who experienced high family support, have sufficient organizational assistance, and support from friends and fans (i.e., social resources) are likely to improve one's self (i.e., personal resources) in terms of enhancing their performance (Berntsen & Kristiansen, 2018; Mao et al., 2020) having better confidence in their skills (Kim & Beehr, 2021; Kim & Cruz, 2021), becoming more hopeful in better outcomes in the future (Mao et al., 2020) and having higher resilience in standing against pressures and adversities (González-Hernández et al., 2020; Kuok et al., 2021). Conversely, loss cycles could also happen in the context of sports. That is, athletes who lack social support have interpersonal conflicts with colleagues and experience deficient team unity (i.e., loss of social resources) possess lower sports engagement, lack of motivation in sports and lack of enthusiasm to improve one's performance (i.e., loss of personal resources). Similarly, those who felt the lack of organizational resources, such as decreasing financial support (Hong & Fraser, 2022; Bilgetürk & Baykal, 2021) and low provision for sports equipment and facilities (Sanni et al., 2018) tend to debilitate personal resources by lowering athletes' motivation (Hong & Fraser, 2021), perceived competence (Tamminen et al., 2018), and a sense of being capable of achieving team and personal goals (Norris et al., 2020).

### **Current Study**

While studies have shown a variety of factors influencing athletes' mental toughness, there is a lack of coherence and theoretical understanding in providing a meaningful narrative on the mechanisms that could account for the creation and development of athletes' mental toughness. Through the lens of COR theory, this study argues that the identified determinants of mental toughness from previous studies are resources. Such resources are necessary for athletes to achieve a healthy degree of mental toughness. This study further asserts that (a) social and organizational resources would account to the increase of personal psychological resources, and ultimately, mental toughness (hypothesis 1) and (b) organizational resources would account for the enhancement of personal psychological resources, and eventually, mental toughness (hypothesis 2)



## Method

### Participants

The sample involved 644 secondary school varsity players from different schools in Northern Mindanao, Philippines. Ages from 12 to 21 mean age of 15.22 years ( $SD = 1.77$ ). Comprising 387 males (60.1%) and 257 females (39.9%). Participants were identified using purposive sampling technique. This approach to participant selection is based not on statistical probability, but on subjective assessments of the individual determining which volunteers are likely to yield the most valuable insights (Andrade, 2021). As such, participants were recruited based on the following criteria: (a) currently enrolled secondary school students, (b) active members of their school's varsity team, and (c) have participated in formal sports competitions. Alongside the demographic information (e.g., age and gender), contextual variables, including the type of sport and level of sports participation, were also collected. Participants emerged from a diverse array of team sports (e.g., basketball, volleyball, football), individual sports (e.g., track and field, swimming, table tennis), and martial arts (e.g., Arnis, Taekwondo) thereby representing a wide range of sporting experiences. Additionally, athletes participated in diverse levels of competition, encompassing division meets, regional meets, and national championships, enabling the study to illustrate variations in training exposure, performance pressure, and resource availability across competitive levels. The detailed characteristics of the participants are shown in Table 1.

Table 1. Sociodemographic profile of the participants

Variables	N (%)	M $\pm$ SD	Range
Sex			
Male	387 (60.10%)		
Female	257 (39.90%)		
Age		15.22 $\pm$ 1.77	12-21 years
Type of Sports			
Individual/Dual Sports	209 (32.4%)		
Team Sports	260 (40.4%)		
Martial Arts	175 (27.2%)		
Level of Sports Participation			
Division Meet- 263	384 (60%)		
Regional Meet-189	189 (29%)		
National Meet- 68	71 (11%)		

### Procedure

The researchers utilized a standardized questionnaire that adequately targets the respondents and meets the study objectives. The cross-sectional survey is designed to include pertinent questions from related studies, such as the social and organizational resources, mental toughness and personal psychological resources. Before data collection, consent was secured from school officials, and the test administration began after receiving approval from the institution's higher authorities. Consent forms were obtained from the participants. Parental or guardian consent forms were obtained, and assent forms were solicited from the participants. The forms explicitly delineated the study's aim, participants' rights, and the significance of preserving confidentiality. The test administration was conducted with regard to the respondents' accessibility, personal preferences, and convenience. Participants filled out the set of questionnaires with assistance from a designated interviewer. Participants were instructed to request explanation if they faced any ambiguous or perplexing items. The study procedures have been thoroughly reviewed and approved by the ethics review committee of the College of Education at Mindanao State University, Iligan Institute of Technology.

### Instrument

The social resources, defined as the perceived sufficiency of social support from family, friends, and significant others, were assessed using the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1990). This is a 12-item scale in which there are four items in each of three subscales, friends (e.g., "My friends really try to help me"); family (e.g., "My Family is willing to help me make decisions"); and significant others (e.g., "there is a special person who is around when I am in need"). All items were





rated on a seven-point Likert-type scale ranging from “very strongly disagree” (1) to “very strongly agree” (7) with the high scores indicating a heightened perception of social support. MSPSS has shown good internal consistency and validity in different populations (e.g., Grey et al., 2020; Katagami & Tsuchiya, 2016). In the current study, the overall scale has a Cronbach’s alpha of .92.

The organizational resources (i.e., athletes’ perception of how much the organization values and cares about their contribution) was measured using Survey of Perceived Organizational Support (SPOS; Eisenberger et al., 1986). This scale contains ten items (e.g., “The organization values my contribution to its well-being.”) each of which consists of seven possible responses (1 = strongly disagree to 7 = strongly agree). A total score can be derived by aggregating the scores of the ten items, with potential scores ranging from 1 to 70. A greater overall score signifies elevated levels of perceived support inside the organization. This scale demonstrates robust psychometric properties (Bilgetürk & Baykal, 2021; Hong & Fraser, 2022). For this study, SPOS obtained a Cronbach’s alpha of .79.

The personal psychological resources of athletes were assessed using Psychological Capital (Luthans et al., 2007). The PCQ is composed of 24 items and six items each measured the four subscales (HERO): hope (e.g., “I feel confident analyzing a long-term problem to find a solution”), efficacy (e.g., “If I should find myself in a jam at work, I could think of many ways to get out of it”), resiliency (e.g., “When I have a setback at work, I have trouble recovering from it, moving on”), optimism (e.g., “When things are uncertain for me at work, I usually expect the best”). The participants rated each item on a 6-point scale (1 = strongly disagree to 6 = strongly agree). The score range of PCQ is 24-144, with higher scores indicating higher degree of positive psychological resources. The psychometric properties of the measure are well-established (Cid et al., 2020; Dirzyte et al., 2021). PCQ and its HERO domains obtained Cronbach’s alpha of .95, .84, .88, .84, and .85 respectively.

The level of athletes’ mental toughness was measured using the Sports Mental Toughness Questionnaire (SMTQ; Sheard et al., 2009). This is a 14-item tool that was established to ascertain mental toughness level and has three sub-dimensions: confidence, constancy, and control. Respondents were requested to indicate their level of toughness in athletics using a 4-point Likert scale, where 1 signifies ‘not at all true’ and 4 denotes ‘very true.’ A higher total score indicates increased mental toughness. This scale demonstrates robust psychometric characteristics (Pocius & Malinauskas, 2024; Wu et al., 2021; Liew et al., 2019). The present investigation yielded a Cronbach’s alpha of .81 for SMTQ.

## Data analysis

Before conducting the mediation analyses, we addressed missing values by using an expectation-maximization algorithm. This algorithm assumes that the missing values are unintentional and randomly distributed (Enders, 2003). Parallel multiple mediation analyses were conducted in order to test whether social (model 1) and organizational (model 2) resources, assigned as predictors, was related to sports mental toughness through personal psychological resources (i.e., hope, efficacy, resiliency, optimism), which were entered as parallel mediators. Demographic variables like age, sex, sport type, and highest degree of sports engagement were included as covariates. The variation was considered significant for capturing the different experiences of high school sports. Considering that various sports demand distinct physical, psychological, and social requirements, sport type and level of sports participation was statistically controlled as a covariate in the mediation analyses to reduce any potential confounding influence on the connection between resources and mental toughness. The PROCESS macro for SPSS (Hayes & Preacher, 2014) was employed to conduct the analysis. The nonparametric bootstrapping method with 10,000 resamples was employed to investigate the indirect effect of the parallel mediators

## Results

### Descriptive statistics

The mean, standard deviations, and bivariate correlations among the variables in Table 2. The correlation between social and personal psychological resources ( $r = .430$ ) and between organizational resources and personal psychological resources ( $r = .421$ ) was moderate to strong, suggesting that athletes who perceive greater social and organisational support are more likely to exhibit a higher level of personal psychological resources, including hope, efficacy, resiliency, and optimism. A robust connection was identified between personal psychological resources and mental toughness ( $r = .494$ ), indicating a



significant relationship between psychological capacities and athletes' capacity to maintain focus and resilience under pressure. The individual components of PPRs, efficacy ( $r = .456$ ) and resilience ( $r = .428$ ), exhibited the highest correlations with mental toughness, underscoring their pivotal role in athletic psychological performance. These findings highlight the capacity of social and organizational contexts to cultivate athlete resilience and strengthen the theoretical basis of the resource gain spiral from COR theory. It is noteworthy that a good link existed between PPRs and their components and sports mental toughness.

Table 2. Result of descriptive statistic and bivariate correlation

	1	2	3	4	5	6	7	8
1. Social resources								
2. Organizational resources	.473**							
3. Sport mental toughness	.148**	.253**						
4. PPR	.430**	.421**	.494**					
5. Hope	.313**	.334**	.352**	.480**				
6. Efficacy	.303**	.261**	.456**	.618**	.387**			
7. Resiliency	.343**	.256**	.428**	.611**	.390**	.604**		
8. Optimism	.229**	.259**	.409**	.507**	.474**	.493**	.534**	
M	64.06	39.20	42.32	106.69	69.55	30.23	28.33	26.97
SD	13.61	8.27	6.28	18.25	11.42	4.92	6.62	5.60

Note: A total of 644 secondary school varsity players participated in this study. PPR= Personal psychological resources; \*\*Correlation is significant at the .01 level (2-tailed). \* Correlation is significant at the .05 level(2-tailed)

## Mediation Analysis

Table 3 presents the results of the parallel mediation analysis using PROCESS (Model 4). For both models (social and organizational resources as independent variables), the total indirect effects through the four personal psychological resources were statistically significant. In model 1 (social resources), the total indirect effect was  $\beta = .068$ , while in model 2 (organizational resources), it was  $\beta = .151$ , reflecting a meaningful mediating role of PPRs in both pathways. Among the mediators, efficacy and resilience demonstrated strongest indirect effects indicating that these constructs contributed the most translating support into mental toughness. The direct effect of organizational resources on mental toughness ( $\beta = .041$ ) remained statistically significant, suggesting partial mediation, that is organizational support influences mental toughness both directly and indirectly via personal psychological resources. The study's findings indicate that there is a significant relationship between social and organizational resources on sports mental toughness, of which is mediated by PPR. This means that players who had support from their friends, family, and significant others (social support; model 1) and from the coaches and school administration (organizational support; model 2) were linked to having higher mental toughness through psychological resources (i.e., hope, efficacy, resilience, and optimism).

Table 3. Result of mediation analysis

IV	MV	DV	Effect		Direct Effect	Total Indirect Effect	Total Effect	Indirect Effect	SE	BC 95% CI	
			IV on MV	MV on DV						LL	UL
PSS	PPR	SMT	.575**	.182**	-.036*	.105**	.068**	.105**	.015	.078	.136
	HO		.262**	.078**	-.029	.097**	.068**	.020**	.007	.008	.036
	EFF		.109**	.316**				.035**	.009	.019	.053
	RES		.167**	.159**				.027**	.009	.004	.029
	OPT		.094**	.163**				.015**	.006	.009	.046
POS	PPR	SMT	.929**	.162**	.041	.151**	.192**	.151**	.151	.115	.188
	HO		.461**	.060*	.062*	.131**	.192**	.011**	.012	.006	.054
	EFF		.156**	.298**				.019**	.013	.023	.073
	RES		.205**	.140**				.013**	.011	.008	.049
	OPT		.176**	.160**				.012**	.011	.008	.052

Note: PSS= Perceived Social Support; POS= Perceived Organizational Support; SMT= Sports Mental Toughness; PPR= Personal psychological resources; HO= Hope; EFF= Efficacy; RES= Resiliency; OPT= Optimism; \*\*Correlation is significant at the .01 level (2-tailed). \* Correlation is significant at the .05 level(2-tailed)

## Discussion

The current study aimed to examine whether social and organizational resources influence sports mental toughness through the extent of personal psychological resources of student-athletes. The current study offers a number of interesting findings worthy of discussion.

First, the results show that social resources are associated with the strengthening of mental toughness. This finding suggests that those who received support from family, friends and acquaintances are likely to build positive attributes as athletes that would make them pursue sports goals despite the pressures and adversities along the way. This result complements previous findings showing that a robust social support network, may it be from athletes' family, friends, social circles, or fans tend to enhance mental toughness (Wu et al., 2021; Temel & Karharman, 2022). Mental toughness in athletes is manifested being through being able to manage effectively their stress (Poulus et al., 2020; Shaw et al., 2022), staying motivated (Hunt et al., 2020; Stamatis et al., 2021), persevering through challenges (Guszkowska & Wojcik, 2021; Gustafsson et al., 2013), being better equipped to handle the demand of sports (Gucciardi et al., 2020; Schinke et al., 2017; Liew et al., 2019), becoming more effective in navigating difficult situations, fostering positive perseverance and easily adapting to one's social environment (Li et al., 2023). Additionally, a negative direct effect on mental toughness was observed, despite the total indirect effect being positive and significant, this suggest that when a mediating role of personal psychological resources is statistically accounted for, the remaining direct effect of social support may reflect overdependence or interpersonal stress, particularly among youth athletes in tightly knit team settings. In collectivist societies like the Philippines, robust social connections may create performance pressures or expectations that, ironically, diminish perceived mental toughness if personal resources such as efficacy and resilience are insufficiently cultivated. This is consistent with COR theory, which posits that resources without supportive pathways may result in stress or resource depletion (Hobfoll et al., 2018).

The second finding pertains to how organizational resources account for the improvement of mental toughness. The current result is aligned with numerous studies revealing that higher level of support from organizations are more likely to develop athletes' mental toughness (Oguntuase & Sun, 2022; Nicholls et al., 2016; Bilgetürk & Baykal, 2021). Specifically, positive coaching behaviors (Murray et al., 2020; Gucciardi et al., 2015), motivating atmosphere and environment within the organization (Gu & Xue, 2022; Ramolale et al., 2021; Nicholls et al., 2016), and sufficient organizational resources (Shang & Yang, 2021; Hunt et al., 2020; Kim & Beehr, 2021) are likely to strengthen mental toughness as these facilitate athletes' ability to effectively cope with pressures during competitive games (Gucciardi et al., 2020; Raabe et al., 2021; Madrigal, 2019). Taken together, both social and organizational resources are vital in strengthening athletes' mental toughness.

The current findings support a prevailing notion in the importance of resources in building one's ability to effectively deal with problems and difficulties (Hobfoll, 2002; Hobfoll et al., 2018), particularly in the context of sports. In the lens of COR theory (Hobfoll, 2011), social and organizational resources are important as these enable individuals to cope with stressful situations effectively, and thereby, enhance the mental toughness (Bédard -Thom et al., 2020; Gu et al., 2022; Gucciardi et al., 2020). Conversely, the results also suggest that the deficiency of social and organizational resources tend to be associated with lower mental toughness. Numerous studies have contended that the insufficiency of social and organizational support debilitates not only athletes' performance but also their ability to respond and cope with difficulties and pressures (Halbesleben et al., 2014; Hobfoll et al., 2018). Taking from the perspective of resource loss, the findings illuminate further the relevance of social and organizational resources and its impact to athletes' mental toughness. Demonstratively, athletes who play in competitive sports typically experience heavy pressure and distress to win games. Losing games, especially when experienced repetitively, increases fear that certain resources will be lost (i.e., loss of support from fans, loss of benefits and perks, termination of contract). This fear will be amplified if there is actual decrease of social and organizational support. The loss or the threat of losing more resources ultimately lower athletes' ability to mentally tough out the embedded pressures brought about by the competitive games itself.

Finally, the results showing the role of personal psychological resources as mediator of social and organizational resources to mental toughness in sports imply that those with higher social and organizational resources increases personal psychological resources, and in turn, strengthens mental toughness.

There are two mechanisms that could facilitate the understanding of these multiple mediation models: first, the link of social and organizational resources to personal psychological resources, and; second, the association of these personal psychological resources to mental toughness. The first mechanism, the generation and increase of personal resources (e.g., hope, efficacy, resilience, optimism) consequent to receiving social and organizational support, is aligned to COR theory's principle 2 (resource investment), specifically corollary 3, which stipulated that those who experienced initial resource gain begets further gain (Hobfoll, 1989). Interestingly, it should be noted that social and organizational resources were anchored in the context of sports while personal psychological resources in this study were construed as general, dispositional traits or characteristics of the athletes. Personal psychological resources refer to one's capability to derive pathways to desired goals (hope; Synder, 2002); having belief in one's ability to perform life tasks (self-efficacy; Bandura, 1982); increased capacity in adapting to difficult or challenging life experiences and manage emotions in the face of stress (resilience; Richardson, 2002), and possessing higher confidence that positive outcomes are more likely to happen than negative ones (optimism; Scheier et al., 2001). Thus, the findings imply that sports-specific resources are beneficial to athletes not only as active players in the competitive sports but also as individuals. With the reservoir of personal psychological resources expected to vastly improve, they are now in the path of increasing their mental toughness.

The second mechanism, the link between a more domain-general personal psychological resource to a more sports-specific mental toughness, could be appreciated by examining the nuanced relationships between specific types of personal psychological resources and mental toughness. For instance, hope, construed as a positive mental health state characterized by having goals (i.e., having a clear goals to work on), pathways (i.e., multitude of ways to achieve a goal), and agency (i.e., a belief in one's ability to achieve a desired goal), has been known to be associated with sustained motivation to generate solutions and plans (Colla et al., 2022; Doorley et al., 2021), overcoming obstacles and challenges (Gustafsson et al., 2013; Tomczak et al., 2024), and ultimately, achieving one's goals (Schornick et al., 2023). In the context of this study, the findings would show that athletes who have higher hope are likely to strengthen mental toughness as evidenced by their ability to thrive amidst extreme pressure to win, adverse sports environment, and difficult competitive challenges. Hopeful athletes perceive challenges as manageable (Pleeging et al., 2019; Doorley et al., 2021), thereby enhancing their confidence to deal with difficulties (Doorley et al., 2021; Colla et al., 2022; Bédard-Thom et al., 2020), becoming more preserving (Pleeging et al., 2019) and adapting better to demanding situations (Chang, 2024; Hsieh et al., 2023).

Moreover, the influence of resilience, another personal psychological resource, to mental toughness is not surprising. Resilience refers to the process and outcome of effectively adapting to challenging life experiences, particularly through mental, emotional, and behavioral flexibility in response to external and internal demands (Aizava et al., 2023; Brace et al., 2020). Conversely, mental toughness in this study denotes the capacity of athletes to maintain consistent performance under pressure and adverse conditions. Impliedly, based on the findings, it is plausible to infer that athletes who are able to bounce back from hard times in life (i.e., high resilience) could also bounce back from pressures and demands of competitive games and the sports environment (i.e., high mental toughness). Conversely, athletes who lack the ability to cope effectively with the hurdles in daily living (i.e., low resilience) are likely to be less persistent in dealing with sports-related glitches (i.e., low mental toughness).

With regard to the results showing the influence of self-efficacy, the third personal psychological resource, to mental toughness could be grasped coherently in light of numerous studies showing that those who are confident of their athletic ability are like to perceive failures and challenges as transitory (Denovan et al., 2022; Diotaiuti et al., 2021). Athletes with high self-efficacy perceived difficulties as opportunities to become better (Méndez-Alonso et al., 2021; Hunt et al., 2020), and therefore, are likely to become distress resistant and mentally tough to the extreme exigencies of their sport. Lastly, optimism, the fourth personal psychological resource, found to significantly account for the buildup of mental toughness is rationally expected. While more research are needed, it could be explicated that optimism, a belief that events will turn into a positive, favorable, and desirable outcome (Guszkowska &





Wojcik, 2021; Méndez-Alonso et al., 2021; Diotaiuti et al., 2021), is vital in the development of mental toughness. Specifically, the ability or disposition to maintain a positive outlook even during distressing condition and circumstances (i.e., optimism) was observed to enhance the ability of individuals to remain focused, motivated, and confident in navigating through setbacks and losses (Ajilchi et al., 2021; Bédard -Thom et al., 2020; Denovan et al., 2022). In this case, we contend that athletes with high optimism are more determined and flexible in adapting to pressures and strain with the certitude that everything will turn out better. They see problems and defeat as temporary and part of their endeavors towards a successful future.

Overall, organizational and social resources improved one's mental toughness brought about by one's heightened perceived capability to devise pathways and sustain motivation to achieve desired goals (hope), ability to bounce back from difficult situations in life (resilience), high confidence in themselves to be better (self-efficacy), and a strong belief that adverse conditions will turn out to better in the future (optimism). It is important to emphasize the importance of sports-related organizational and social resources in improving a more general personal resources and well-being, and in turn, enhance the mental toughness of athletes in dealing with the demands and distress of their sports.

While this study offers novel insights into how personal psychological resources influence the impact of social and organizational resources on student-athlete's mental toughness in both academic and sports contexts, it is essential to acknowledge its limitations. First, the reliance on self-reported data introduces potential biases, such as social desirability bias, which may affect the accuracy of the reported relationships between social, organizational resources, and personal psychological resources, and mental toughness. Secondly, the cross-sectional design limits the ability to establish causality, as it captures the relationship at a single point in time rather than examining their progression or changes over time. Longitudinal or experimental designs would provide a stronger basis for causal inferences. While the study explores the mediating role of personal psychological resources, other potentially relevant moderators or mediators such as environmental factors, individual differences, or nature of stressors were not explored and could provide further insights into the complex interplay of these constructs. Lastly, the study predominantly emphasizes the positive aspects of psychological resources potentially overlooking the effect of negative factors such as burnout, stress, or anxiety which may also mediate the relationship between resources and mental toughness of student-athletes.

Despite the study's limitations, this study offers several notable strengths that contribute to its significance and applicability. First, it highlights the integral role of social and organizational resources in enhancing mental toughness. By linking these resources to key personal resources such as hope, efficacy, resiliency, and optimism, this study provides a comprehensive framework for understanding how external factors influence personal psychological resources. Additionally, the study bridges theoretical and practical domains by offering actionable insights for coaches, sports organizations, and educators on how to cultivate an environment that strengthens personal psychological resources and mental toughness. The emphasis on both academic and sports contexts further broadens the study relevance, addressing the multifaceted challenges faced by student-athletes. Finally, the study contributes to the growing body of literature by providing a framework that highlights the interconnectedness of external resources and personal attributes, paving the way for more targeted interventions to support student-athletes' holistic development.

## Conclusions

This study offers insights into the mechanisms through which social and organizational resources influence the development of mental toughness in student-athletes. By applying the COR theory, the study provides a novel theoretical lens for understanding how external supports, such as encouragement from family, peers, coaches, and institutions contribute to personal psychological resources such as hope, efficacy, resiliency, and optimism. These personal resources, in turn, play an essential mediating role in enhancing athletes' mental toughness. The findings affirm the central tenets of COR theory, particularly the concepts of resource caravans and gains spirals, by demonstrating that social and organizational resources do not operate in isolation but rather build upon each other to generate meaningful psychological outcomes. The initial integration of a resource-based framework into the development of mental

toughness broadens the current literature, which has frequently concentrated more specifically on features or discrete psychological interventions. The study indicates that not all psychological resources have equal contributions; efficacy and resiliency emerged as particularly significant mediators, emphasizing the necessity for focused interventions. The findings have significant implications for coaches, sports psychologists, and educational institutions seeking to develop mentally resilient athletes through the establishment of supportive settings that enhance both interpersonal and structural resources. This study affirms the significance of social and organizational support in athlete development and enhances the field by providing a theoretically informed explanation of how these supports are internalized into psychological strengths, thereby enhancing the development of mental toughness in competitive sports environments.

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