

Brazilian student-athletes' perceived possession of dual career competencies Percepción de las competencias de la carrera dual de estudiantes-deportistas brasileños

*Guilherme Alves Grubertt, **Felipe Rodrigues da Costa, ***Helio Serassuelo Junior, ****Sara Márquez
*Instituto Federal de Educação, Ciência e Tecnologia de Mato Grosso do Sul (Brasil), **Universidade de Brasília (Brasil),
Universidade Estadual de Londrina (Brasil), *Universidad de León (España)

Abstract. Dual career is defined as a career with the major foci on sport and studies or work. Dual career competencies are all the skills and attitudes that allow athletes to balance their educational development to their sports careers. This study aimed to investigate the differences in perceived possession of competencies (Dual Career Management; Career Plan; Emotional Awareness; Social Intelligence and Adaptability) between Brazilian student-athletes of both sexes, types of educational institutions (TEI) – private and public, and educational level (EL) – secondary and higher education. 745 Brazilian student-athletes ($M_{age} = 17.3 \pm 5.4$; 54% female; 8% student-athletes with disabilities) completed the Brazilian version of the Dual Career Competency Questionnaire for Athletes. The results showed statistically significant outcomes in the main effect for sex and EL. Female student-athletes from public TEI ($M = 4.23 \pm 0.38$) presented higher perceived possession for Dual Career Management when compared to male student-athletes from the same categorization of TEI ($M = 4.03 \pm 0.04$). Female student-athletes from private TEI reported lower perceived possession for Emotional Awareness ($M = 3.73 \pm 0.04$). The results of this investigation can support (1) coaches, family, stakeholders in general and the student-athletes themselves in better grasping and optimizing their attitudes towards dual career and (2) researchers advance knowledge in this very recent area in Brazil.

Keywords: dual career, student-athlete, competencies, education, sports training

Resumen. Carrera dual se define como una carrera en la que los principales focos son el deporte y los estudios o el trabajo. Competencias de la carrera dual son todas las habilidades y actitudes que permiten a los deportistas equilibrar su desarrollo educativo con sus carreras deportivas. Este estudio tuvo como objetivo investigar las diferencias en la posesión percibida de competencias (Gestión de la carrera dual; Plan de carrera; Conciencia emocional; Inteligencia social y Adaptabilidad) entre estudiantes-deportistas brasileños de ambos sexos, tipos de instituciones educativas (TEI) - privadas y públicas, y nivel educativo (EL) - educación secundaria y superior. 745 estudiantes-deportistas brasileños ($M_{edad} = 17.3 \pm 5.4$; 54% mujeres; 8% estudiantes-deportistas con discapacidad) rellenaron la versión brasileña del Cuestionario de Competencias de la Carrera Dual para Deportistas. Se identificaron resultados estadísticamente significativos en el efecto principal para sexo y EL. Las estudiantes-deportistas de instituciones públicas ($M = 4.23 \pm 0.38$) presentaron un mayor nivel de posesión en Gestión de la Carrera Dual en comparación con los estudiantes-deportistas de la misma TEI ($M = 4.03 \pm 0.04$). En las instituciones privadas, las estudiantes-deportistas declararon un menor nivel de posesión en Conciencia Emocional ($M = 3.73 \pm 0.04$). Los resultados pueden ayudar (1) a los estudiantes-deportistas, a los entrenadores, y toda a la red de apoyo a comprender y mejorar sus actitudes con respecto a la doble carrera y (2) a los científicos a avanzar en el conocimiento de esta área de investigación, que es muy reciente en Brasil.

Palabras-clave: carrera dual, estudiante-deportista, competencias, educación, entrenamiento deportivo

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Guilherme Alves Grubertt

guilherme.grubertt@ifms.edu.br

Introduction

Young athletes face the routine of the sporting context (e.g. training, competitions, travel, injuries, etc.) and the demands of the educational context at the same time. The optimal dual career balance is defined as a combination of sport and studies that helps student-athletes achieve their educational and athletic goals, live satisfying private lives and maintain their health and well-being (Stambulova et al., 2015).

In the international scenario, the holistic athletic career model (Wylleman, 2019) became the dominant framework to study athletes' dual career, once it demonstrates that athletes will face transitions within the sport level and at various levels of holistic development (athletic, psychological, psychosocial, academic/vocational, legal, and financial). This model is used to improve understanding of the support needs of athletes at different stages of their careers. It serves as a basis for developing support programs aimed not only at sporting success, but also at holistic development and preparation for life after sport. The model challenges reductionist approaches that focus

only on sporting performance, promoting an integrated view of the athletic career. This is essential for the sustainable and balanced development of athletes, ensuring that their personal, psychosocial and educational needs are met throughout their journey (Kegelaers et al., 2022; Saarinen; Phipps; Bjørndal, 2024).

In this context, dual career competencies are understood as all the skills, attitudes, and knowledge that allow athletes to align their educational development to their sports careers (Wylleman et al., 2017). In addition, these skills, attitudes, and knowledge should be accompanied by experiences (Hunter, 2004). Therefore, student-athletes have different competencies at different stages of sport development (Cosh & Tully, 2014; López de Subijana et al., 2015; Stambulova et al., 2015). Investigations from Europe and United States are considerably diverse regarding research focus and theoretical frameworks. For example, there are data related to the student-athletes' competencies (De Brandt et al., 2017), individual competencies of coaches, trainers and others involved in supporting dual career (Defruyt et al., 2019), mental health (Kegelaers et al., 2022), influence of religious commitment (Stapleton &

Crandall, 2022), inclusion of transgender student-athletes (Gray et al., 2018), student-athletes' ability to face the challenges during Covid-19 (Izzicupo et al., 2021), and so on.

Dual career investigations in Brazil are mostly based on qualitative methodologies, analyzing the student-athletes' dual career from a wide variety of sports (Rocha et al., 2021), level of competition (Motta et al., 2021), level of education (Coelho et al., 2021; Maquiaveli et al., 2021) and other variables (Costa et al., 2021; Romão, 2021). In addition, a recent narrative review identified that Brazilian dual career studies are focused on the characteristics of routine management and analysis of the social environment in dual career (Rocha et al., 2023). In this sense, there is a problem with supporting Brazilian student-athletes considering their educational, financial, legal, psychological, familial, and sporting competencies, i.e., their holistic development (Wylleman, 2019).

The Brazilian Law on the Guidelines and Bases of National Education allows educational institutions the autonomy to draw up plans to support the academic development of athletes, considering their sporting condition. It's important to note that recent research indicates a heterogeneous pattern in the execution and development of actions to support athletes' career in Brazil (Santos et al., 2024). This heterogeneity appears to be associated with the absence of a structured sports system. Therefore, there is no comprehensive national or regional public policy to regulate, support, or promote dual career (Costa & Figueiredo, 2021).

Besides the gaps identified, only a few research instruments have been validated internationally, allowing for subsequent adaptation and replication in different models (Picamilho; Saragoça; Teixeira, 2023). The existence of this kind of instrument can contribute to scientific knowledge on this issue and improve the existing model that involves various entities with responsibilities at municipal, state, and federal levels, as well as sports federations and sports clubs, and enhance the conditions for combining a sporting career with an educational career for student-athletes (Maciel et al., 2023).

The studies conducted in Brazil so far, which have identified and quantified dual career characteristics, have not investigated the student-athletes' competencies using specific instruments based on a holistic approach. Considering this methodological gap, Grubert et al. (2023) proposed the Brazilian version of the Dual Career Competency Questionnaire for Athletes (DCCQ-A-BR), originally proposed for European athletes by De Brandt et al. (2018). The Brazilian version of this instrument has enormous potential for change and knowledge of dual career in Brazil, considering that since 2023 it has been presented and disseminated at congress, university courses, and postgraduate courses across the country.

Considering the lack in methodology of Brazilian dual career context, the aim of this study was to investigate the differences in perceived possession of competencies between Brazilian student-athletes of both sexes, types of ed-

ucational institutions (TEI) – private and public, and educational level (EL) – secondary and higher education of the Brazilian southern region.

Materials and Method

Participants

Participants included 745 student-athletes ($M_{age} = 17.3 \pm 5.4$; 54% female; 8% student-athletes with disabilities) beneficiaries in all categories of OPG program. Basically, the categories of participants are organized into levels of competition: school (36%), state (42%), national (19%), and international (3%). Participants in the national and international categories were recognized as elite (high-performance) by their respective national elite sport institution/governing body. In other words, the student-athlete is a member of their sports federation and has won podium positions in national and international competitions in the last two years. The student-athletes played individual-sports such as athletics ($n = 75$), boxing ($n = 2$), breaking ($n = 1$), canoe slalom ($n = 25$), cycling road ($n = 25$), sport climbing ($n = 3$), fencing ($n = 19$), wheelchair fencing ($n = 3$), artistic gymnastics ($n = 10$), rhythmic gymnastics ($n = 41$), golf ($n = 7$), equestrian ($n = 10$), judo ($n = 48$), karate ($n = 13$), weightlifting ($n = 6$), wrestling ($n = 5$), marathon swimming ($n = 1$), swimming ($n = 73$), modern pentathlon ($n = 4$), rowing ($n = 2$), skateboarding ($n = 5$), badminton ($n = 28$), surfing ($n = 4$), taekwondo ($n = 26$), tennis ($n = 25$), archery ($n = 1$), shooting ($n = 1$), triathlon ($n = 10$), boccia ($n = 1$), table tennis ($n = 30$), wheelchair tennis ($n = 2$), and team-sports such as basketball ($n = 50$), wheelchair basketball ($n = 8$), artistic swimming ($n = 4$), baseball/softball ($n = 12$), football ($n = 21$), blind football ($n = 3$), handball ($n = 44$), rugby ($n = 11$), beach volleyball ($n = 22$), sitting volleyball ($n = 3$), volleyball ($n = 58$). The student-athletes with disabilities who participated in this study attend the functional classification criteria at the national and international levels, as it is also a requisite to be a member of the OPG program. Table 1 shows the demographic characteristics of the participants.

Instrument

The Dual Career Competency Questionnaire for Athletes (DCCQ-A) was designed in English and then translated by the Gold in Education and Elite Sport project (GEES) researchers in eight languages: Catalan and Spanish (Spain), Dutch (Netherlands), French (France), Italian (Italy), Polish (Poland), Slovenian (Slovenia), and Swedish (Sweden). It consists of 29 potentially important items of dual career competency on a 5-point Likert-type scale by answering two main questions: i) How important are each of these items for you in order to successfully combine sport and study? (1-unimportant to 5-very important), and (ii) To what extent do you possess each of these items? (1-very poor to 5-very good). This instrument measures the atti-

tudes, skills, knowledge, and experiences of student-athletes through 29 items that assess their perceptions of the possession on competencies: Dual Career Management, Career Planning, Emotional Awareness and Social Intelligence/Adaptability.

The initial validation of DCCQ-A (De Brandt et al., 2018) proposed for the European athletes showed satisfactory psychometric properties ($\chi^2(296) = 2699.61$; RMSEA = .049; CFI = .95; TLI = .93 and internal consistency ($\alpha = .75 - .87$). The DCCQ-A-BR (Grubertt et al., 2023) also revealed excellent psychometric properties ($\chi^2(371) = 1239.755$; RMSEA = .056; CFI = .98; TLI = .98 and internal consistency ($\omega = .90$). The DCCQ-A-BR study was conducted with beneficiaries of the Olympic and Paralympic Generation Program in the state of Paraná – Brazil (OPG program). The OPG program is the broadest financial support program, at state level, for athletes in Brazil and serves as a motivating agent which contributes to the development of potential and high-performance talents for the Olympic and Paralympic Games.

Table 1.
Student-athletes demographic characteristics

Sex	N	%
Female	400	53.7%
Male	345	46.3%
Sport		
Individual-sports	509	68.3%
Team-sports	236	31.7%
EL		
Secondary education	575	77.2%
Higher education	170	22.8%
TEI		
Private	371	49.8%
Public	374	50.2%

Note: EL = educational level; TEI = type of educational institution

In addition, it identified four latent factors: Career Planning, Dual Career Management, Emotional Awareness, and Social Intelligence and Adaptability. The competency Career Planning is related to flexibility, have back up plans and career exploration (5 items). The competency Dual Career Management is related to self-discipline, efficient use of time, and dedication to succeed (10 items). The competency Social Intelligence and Adaptability is related to maintaining relationships, making social contacts, asking advice, understanding the importance of rest and recuperation (7 items). The competency Emotional Awareness is related to stress management, emotion regulation, resilience, focus and self-belief (7 items).

As previously described, the original DCCQ-A is based on a 5-point Likert-type scale by answering two main questions: i) How important are each of these items for you in order to successfully combine sport and study? (1-unimportant to 5-very important), and (ii) To what extent do you possess each of these items? (1-very poor to 5-very good). However, we decided to use just the second question in the questionnaire (perceived possession) because this question was applied to access the psychometric analyses of the original instrument and the Brazilian version. To sum up, DCCQ-A-BR allows Brazilian student-athletes and

those involved in supporting dual career (parents, coaches, friends) to focus on skill development and develop goals for their dual career (rather than focusing only on short-term outcome goals).

Procedures

The participants were previously informed about the study procedures through three phases: (1) first contact with the General Superintendence of Sports of the state of Paraná and the OPG program to provide all the necessary information for a better grasp of the research objectives; (2) from the partnership between the Study Group on Physical Activity, Psychology and Health (GEAPS/UDEL) and OPG program, researchers responsible for this study and OPG program, respectively, informed the student-athletes about the objectives and steps of this investigation through a document presenting the research project and an invitation to participate. This process lasted 5 months (April to August 2022). (3) The instrument and an informed consent explaining the purpose of the study and highlighting the ethical principles were emailed to 1,100 student-athletes (and their legal guardian when the participant under-18-year-old) in September 2022, with 2 months as a deadline for fulfilment, by the responsible for this study. The inclusion criterion for the study was participation in the OPG program. The DCCQ-A-BR was conducted via an online application using the Google Forms platform. The ethics committee for research involving human beings of the university where this investigation was carried out approved it with the number CAAE 13654719.2.0000.5231.

Data analyses

In order to investigate the extent to which perceived possession competency were different for student-athletes of both sexes, TEI (private and public), and EL (secondary and higher education), we used a MANOVA. We verify the main and interaction effects using the Bonferroni post-hoc analysis (Kim, 2015). To make the results reliable for deviations from the normal distribution of the sample, differences between group sizes, and to provide a 95% confidence interval for the differences between the means we used the bootstrapping procedures (Haukoos & Lewis, 2005). Statistical analyses were conducted using the statistical software SPSS Statistics 23.0.

The sample size estimate for this study was carried out using the G*Power software. In order to detect an Eta Square effect ($\eta^2 = .06$ with 95% power in a MANOVA test, which represents the group splits ($\alpha = .05$), the G*Power software suggests 69 participants in each group ($N = 276$). The smallest effect size of interest was defined to be $d = 0.71$ and $\eta^2 = .06$ based on the study by De Brandt et al., (2017).

Results

The BOX's M test accepted the covariance homogeneity hypothesis (BOX's M = 38,694; $F(30, 296204, 595)$, $p =$

.146). MANOVA results showed that there was no main effect for the TEI*sex interaction ($F(4, 738) = 2.166, p = .071; \eta^2 = .012$) and EL*sex ($F(4, 738) = 1.870, p = .114; \eta^2 = .010$). However, it showed statistically significant results in the main effect for sex ($F(4, 738) = 17.782, p < 0.001; \eta^2 = 0.08$), TEI ($F(4, 738) = 5.509, p < .001; \eta^2 = 0.03$) and EL ($F(4, 738) = 3.335, p < 0.05; \eta^2 = 0.02$) with moderate effect size for sex and low effect size for educational institutions and level of education (Fritz et al., 2012). Table 2 shows the descriptive statistics for the DCCQ-A BR perceived possession of competencies of the student-athletes.

Table 2.
Descriptive statistics of the student-athletes perceived possession of competencies

Competencies	Mean	SD	95% CI	
			Lower	Upper
Dual Career Management	4.19	0.20	4.15	4.23
Career Planning	3.94	0.02	3.90	3.90
Emotional Awareness	3.84	0.21	3.80	3.88
Social Intelligence and Adaptability	4.31	0.01	4.21	4.34

Note: SD = Standard deviation; CI = confidence interval.

Table 3.
Multiple comparisons (Competencies*TEI*Sex) with Bonferroni post-hoc and bootstrapping procedures

Competencies	TEI	Sex	Mean Difference	CI (95% BCa)	
				Lower	Upper
Dual Career Management	Private	Female	-.008 ^{n.s}	-.119	.102
		Male			
	Public	Female	.204**	.094	.314
		Male			
Career Planning	Private	Female	-.121 ^{n.s}	-.249	.007
		Male			
	Public	Female	.098 ^{n.s}	-.029	.225
		Male			
Emotional Awareness	Private	Female	-.284**	-.404	-.165
		Male			
	Public	Female	-.060 ^{n.s}	-.179	.058
		Male			
Social Intelligence and Adaptability	Private	Female	-.096*	-.191	.000
		Male			
	Public	Female	.038 ^{n.s}	-.057	.133
		Male			

Note: TEI = types of educational institution; BCa = Bias corrected accelerated; CI = confidence interval; n.s = non-significant; * $p < 0.05$; ** $p < 0.01$.

Table 3 shows the subsequent Bonferroni post-hoc analyses to clearly understand these findings. The results showed that female student-athletes from public TEI ($M = 4.23 \pm 0.38$) presented higher perceived possession for Dual Career Management when compared to male student-athletes from the same categorization of TEI ($M = 4.03 \pm 0.04$). However, when the analysis is carried out using TEI without stratification by sex, the perceived possession is higher for private TEI ($4.25 \pm 0.28; p = 0.003$). The same applies to Social Intelligence and Adaptability ($4.38 \pm 0.02; p < 0.001$). Female student-athletes from private TEI reported lower perceived possession for Emotional Awareness ($M = 3.73 \pm 0.04$) when compared to the opposite sex from the same TEI ($M = 4.02 \pm 0.04$). When we analyze the stratification by sex only, female student-athletes still

showed the lowest perceived possession for Emotional Awareness ($M = 3.72 \pm 0.03; p < 0.001$).

Regarding the multiple comparisons by EL and sex (table 4), the results pointed out that female student-athletes from secondary showed higher perceived possession for Dual Career Management ($M = 4.23 \pm 0.03$) when compared to males from the same category ($M = 4.09 \pm 0.03$). On the other hand, Emotional Awareness perceived possession was lower for female student-athletes in both EL (Secondary, $M = 3.78 \pm 0.03; p < 0.05$; Higher education, $M = 3.66 \pm 0.06; p < 0.001$). Analyses based on EL without stratification by sex identified higher perceived possession values for Dual Career Management ($M = 4.27 \pm 0.04; p < 0.05$) and Career Planning ($M = 4.06 \pm 0.04; p = 0.005$) for student-athletes from higher education.

Table 4.
Multiple comparisons (Competencies*EL*Sex) with Bonferroni post-hoc and bootstrapping procedures

Competencies	EL	Sex	Mean difference	CI (95% BCa)	
				Lower	Upper
Dual Career Management	Secondary	Female	.141**	.052	.230
		Male			
	Higher education	Female	-.028 ^{n.s}	-.191	.136
		Male			
Career Planning	Secondary	Female	.042 ^{n.s}	-.060	.145
		Male			
	Higher education	Female	-.166 ^{n.s}	-.354	.022
		Male			
Emotional Awareness	Secondary	Female	-.109*	-.205	-.013
		Male			
	Higher education	Female	-.378**	-.554	-.202
		Male			
Social Intelligence and Adaptability	Secondary	Female	.012 ^{n.s}	-.065	.090
		Male			
	Higher education	Female	-.154 ^{n.s}	-.296	-.013
		Male			

Note: EL = educational level; BCa = Bias corrected accelerated; CI = confidence interval; n.s = non-significant; * $p < 0.05$; ** $p < 0.01$.

Discussion

Dual career is an emerging area of research in the Brazilian academic context. The investigations that analyzed dual career characteristics, so far, did not investigate the competencies of student-athletes using specific instruments based on a holistic approach. Thus, the aim of this study was to investigate the differences in perceived possession of competencies between student-athletes of both sexes, types of educational institutions (TEI) – private and public, and educational level (EL) – secondary and higher education of the Brazilian southern region using the DCCQ-A-BR (Grubert et al., 2023).

We decided to analyze these independent variables (sex, TEI and, EL) because (i) the perceived possession competencies based on sex can show discrepancies in opportunities and resources between males and females. This is crucial to promoting gender equity in dual career context by identifying and addressing specific challenges faced by athletes of different sexes (Moura et al., 2020). (ii) Stratification by TEI (private versus public) can reveal differences in

access to resources and support for student-athletes in different contexts. In some cases, athletes from private institutions have access to high-quality training, modern facilities, and financial support (Costa et al., 2021), while those from public institutions may face limitations in these aspects. (iii) Understanding how perceived possession of competencies differs between student-athletes from high school and university can shed light on how academic demands impact on sporting performance and vice versa (Wanzeler et al., 2024). All the stratifications performed in this study can help to understand the interaction between sport and education and to develop inclusive policies that allow all athletes to reach their full potential.

Our investigation revealed important differences in perceived possession on dual career competencies according to sex and TEI. Female student-athletes attributed greater perceived possession to the competency that reflects the organization and balance to remain committed to the combination of the demanding tasks of the sporting and educational context (Dual Career Management). Besides contributing to the visibility of the female sports scene, this outcome strengthens the theoretical framework of other investigations that indicate a greater inclination towards the educational context of student-athletes (Martins et al., 2021; Perez-Rivases et al., 2020). Mainly because the investment in their sporting career correlates with the resources, they must maintain their educational context (Maquiaveli et al., 2021).

In general, perceived possession of the competency regarding control and how a student-athlete deals with internal and external pressures and adversity were lower for female student-athletes (Emotional Awareness). This result was also found in investigations of female student-athletes in different regions of the European continent (De Brandt et al., 2017; Perez-Rivases et al., 2020; Tekavc et al., 2015). This characteristic identified in the different cultural contexts of the female student-athletes may reflect the difficulties faced in specific transition periods such as biopsychosocial development during puberty. In addition, there may be other barriers like a low financial income, professional career aspirations, pressure to have children and forms of motherhood.

It is worth noting that emotional, time management and relationship skills tend to make it easier to reconcile sporting and educational activities (Linnér et al., 2019; Postema et al., 2022). However, perceived possession of the competency Emotional Awareness, especially for females, found in this study can be considered a barrier as student-athletes become more susceptible to physical and mental burnout (Akbar et al., 2024) because adolescents are experiencing a crucial stage of emotional development; personal identity; and dealing with competitive pressure and external expectations can be challenging and affect their self-esteem and confidence.

Although there are no institutional programs or public policies aimed at effectively moderating the sport-education relationship for student-athletes, or female student-

athletes, it is worth noting that the state of Paraná is a national leader in guaranteeing the rights of female athletes in relation to financial grants to encourage sport. At the beginning of 2023, according to a change in the regulations of the OPG program, pregnant athletes and mothers of newborns can use the sports results achieved before pregnancy to claim the financial support. In other words, they can apply for the grant even if they are not in the competition period, thus guaranteeing resources for the periods stipulated in the program, which can be up to six months. This action guarantees the rights of female athletes before, during and after pregnancy and can help to maintain their dual career.

Student-athletes from higher education showed higher perceived possession values for the competency that reflect organization, dual career planning and the flexibility required to deal with barriers during and after the dual career (Career Planning). Although this result was expected because student-athletes from higher education theoretically possess higher maturity levels as they are at post-puberty (post-adolescence) development levels, it is important to note the skills of student-athletes from secondary education. Even though this outcome for secondary is different compared to Spanish student-athletes (Moyà et al., 2017) and Finnish student-athletes (Romar et al., 2021), it is recommended to start working effectively on dual career skills in secondary. Thus, there is a possibility of the positive development of dual career, even life skills for young student-athletes, since adolescence is a period of identity construction, and at some point, they will have to decide whether or not to pursue the option of an elite sport career.

Perceived possession competencies of Dual Career Management and Social Intelligence/Adaptability, which reflect interpersonal aspects of seeking the support needed to establish and preserve an environment that facilitates dual career, with a view to positive adaptation to a (new) social environment, showed higher perceived possession values for student-athletes from private TEI. At this point, it is crucial to highlight the complexity of social inequality in Brazil. Considering that (1) dual career can change according to social public policies (Torregrossa et al., 2016); (2) the Brazilian education system still reproduces transition inequalities at all levels of education (Melo et al., 2020); and (3) the last editions of national school and university games were won, for the majority, by private TEI; the challenges and inequalities faced by the Brazilian public education system may be reflected in the experiences of the student-athletes involved in this study. According to Souza et al. (2023) these issues can influence the discontinuation and instability of a student-athlete during their sporting and educational career.

This is the first investigation to analyze the Brazilian student-athletes' perceived possession competencies of dual career with a specific instrument based on a holistic approach with measures validated. No previous research into the dual career of Brazilian student-athletes has recruited a sample of the magnitude of the present investigation, including student-athletes with disabilities from different

sports (team and individual), different levels of competition (school, state, national and international), and a wide number of different sports. Despite the originality of this investigation, there are limitations that need to be mentioned.

First, the sample was composed of student-athletes from the state of Paraná (located in the south of Brazil and considered the second most developed in the country). Regarding the territorial extension and the specific characteristics of each Brazilian zone, we encourage other researchers to apply the instrument with student-athletes from different country zones. Second, only a modest parcel of the sample can be considered high-performance because of their competition category (19% national level, and 3% international level), according to the OPG program. We consider these data a temporary limitation based on the state of the art of student-athletes' dual career in Brazil since most studies involving this research area are associated with high-performance or talented athletes and do not involve non-Olympic sport or performance arts. Third, as in any self-report measure, there are always concerns regarding memory recall, bias for social desirability, and truthfulness of responses (Brenner & Delamater, 2014). In addition, considering the moment of data collection and the fact that no Brazilian dual career assistance program exists (Nogueira, 2022), the lack of a balance between the sport and educational contexts might have originated tension when the participants were completing the questionnaire.

Based on the investigation conducted, practical applications for supporting dual career of Brazilian student-athletes include developing individualized training programs that address their specific needs, such as Dual Career Management and Emotional Awareness, focusing on enhancing these skills among female athletes. Educational institutions can implement flexible academic schedules, counselling, and career planning resources, particularly benefiting student-athletes in public schools and higher education.

Families and stakeholders can foster support through better parental guidance, community programs, and inclusive initiatives for athletes with disabilities, ensuring they have equal opportunities and access to resources for balancing their dual career. Student-athletes can benefit from attending workshops that focus on career planning and time management, helping them to better navigate the challenges of balancing sports and education.

The literature on the subject could benefit from more in-depth analysis of environments and could explore factors affecting dual career competencies, develop targeted interventions, and inform policy recommendations to establish robust support systems for these athletes at state and national level. By implementing these practical applications, various stakeholders can contribute to the holistic development of student-athletes, ensuring they can thrive both academically and athletically.

Conclusion

The findings of this investigation indicate the relevance

of dual career competencies and recommend that the differences according to sex and TEI should be considered in the development of Brazilian student-athletes from the southern region. These different characteristics of the dual career perceived possession competencies of the participants in this investigation based on the stratifications conducted deserve attention of educational institutions and all stakeholders due to the positive impacts (lower levels of burnout/early dropout from the context of sport or education, life skills, positive behaviors associated with socialization, higher values of self-regulation), and negative impacts (increased risk of injury, limited experience with internal/external pressures and with life outside the competitive sport context) that may affect student-athletes.

The results on perceived possession of Emotional Awareness are in line with current discussions on the challenges and demands faced by student-athletes worldwide, which directly influence a higher risk of mental health problems. Therefore, psychosocial development is extremely important for a student-athlete to achieve progressively higher levels in academic and sport scenario. We hope the consolidation of important aspects of their identity at the sport and educational transition moment through psychological preparation possible programs and the implementation of projects with different schedules for dual career that highlight the role of the athletes in planning their careers. For this reason, we recommend that Brazilian dual career' researchers continue to investigate student-athletes to manage all these dual career demands, because they should not be ignored, considering the complexity of social inequality in Brazil.

We suggest conducting future research in the national context based on a longitudinal design and mixed research models (quantitative and qualitative approaches). Thus, apart from enhancing the theoretical debate on this topic nationally in future studies, we can fill this gap in the state-of-the-art and practical applicability of dual career in Brazil. Finally, the results of this investigation can support (1) coaches, family, stakeholders in general and the student-athletes themselves in better grasping and optimizing their attitudes towards dual career and (2) researchers advance knowledge in this area, which is very recent in Brazil. This investigation could be an essential step towards building policies and practices that enable student-athletes to reach their full potential in all contexts of their lives, strengthening the sport and education scenario in Brazil.

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Conflicts of interest

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Authors' contributions

The corresponding author was involved in designing the study, collecting the data, data analyses, and wrote the manuscript. Other authors reviewed critically the manuscript. All authors contributed to the article and approved the submitted version.

Data availability statement

The data that support the findings of this manuscript are available from the corresponding author, upon reasonable request.

References

- Akbar, A., Karim, K., Zakaria, J., Rahman, M. A., Suryanef, S., Cahyani, F. I., ... & Hamzah, N. B. (2024). Understanding mental toughness in student-athletes: Insights from sport psychology. *Retos: nuevas tendencias en educación física, deporte y recreación*, (54), 1-9. doi.org/10.47197/retos.v54.102230
- Brenner, P. S., & Delamater, J. D. (2014). Social desirability bias in self-reports of physical activity: is an exercise identity the culprit? *Social Indicators Research*, 117, 489-504. doi: 10.1007/s11205-013-0359-y
- Coelho, F. G., Maquiaveli, G., Vicentini, L., Streb Ricci, C., & Rodrigues Marques, R. F. (2021). Dual career in Brazil: analysis on men elite futsal players' academic degree. *Cultura_Ciencia_Deporte*, 16(47), 69-83. doi.org/10.12800/ccd.v16i47.1696
- Cosh, S., & Tully, P. J. (2014). "All I have to do is pass": a discursive analysis of student athletes' talk about prioritising sport to the detriment of education to overcome stressors encountered in combining elite sport and tertiary education. *Psychology of Sport and Exercise*, 15, 180-189. doi: 10.1016/j.psychsport.2013.10.015
- Costa, F. R. D., & Figueiredo, A. J. (2021). Reflexões sobre a Dupla Carreira - A harmonia entre a universidade pública e o esporte de alto-rendimento. *The Journal of the Latin American Socio-cultural Studies of Sport (ALESDE)*, 13(1), 1-16. doi:10.5380/ra.v15i1.87056.
- Costa, F. R. D., Miranda, I. S. D., Hagström, L., Santos, C. R. L. D., & Rezende, A. L. G. D. (2021). Sports-education dual career: the reality of elite fancy diving athletes in Brazil. *Movimento*, 27(e27016). doi: 10.22456/1982-8918.109456
- De Brandt, K., Wylleman, P., Torregrossa, M., Defruyt, S., & Van Rossem, N. (2017). Student-athletes' perceptions of four dual career competencies. *Revista de Psicología del Deporte*, 26(4), 28-33.
- De Brandt, K., Wylleman, P., Torregrossa, M., Schipper-van Veldhoven, N., Minelli, D., Defruyt, S., & De Knop, P. (2018). Exploring the factor structure of the dual career competency questionnaire for athletes in European pupil-and student-athletes. *International Journal of Sport and Exercise Psychology*, 1-18. doi: 10.1080/1612197X.2018.1511619
- Defruyt, S., Wylleman, P., Stambulova, N., CeciĆ Erpič, S., Graczyk, M., & De Brandt, K. (2021). Competencies of dual career support providers (DCSPs): A scenario-specific perspective. *International Journal of Sport and Exercise Psychology*, 19(1), 43-60. doi.org/10.1080/1612197X.2019.1655773
- Fritz, C. O., Morris, P. E., & Richler, J. J. (2012). Effect size estimates: current use, calculations, and interpretation. *Journal of Experimental Psychology*, 141, 2-18. doi: 10.1037/a0024338
- Gray, A., Crandall, R.E., & Tongsri, J. (2018). Transgender student-athletes and their inclusion in intercollegiate athletics. *New Directions for Student Services*, 163, 43-53. doi:10.1002/ss.20269.
- Grubertt, G. A., Márquez, S., & Serassuelo Junior, H. (2023). Dual career competency questionnaire for athletes: Psychometric properties of the Brazilian version. *Frontiers in Psychology*, 14(1196432). doi:10.3389/fpsyg.2023.1196432
- Haukoos, J. S., & Lewis, R. J. (2005). Advanced statistics: bootstrapping confidence intervals for statistics with "difficult" distributions. *Academic Emergency Medicine*, 12(4), 360-365. doi: 10.1197/j.aem.2004.11.018
- Hunter, W. (2004). *Knowledge, Skills, Attitudes, & Experiences Necessary to Become Globally Competent* [Doctoral dissertation, Lehigh University]. ProQuest Dissertations and Theses Global.
- Izzicupo, P., Di Baldassarre, A., Ghinassi, B., Abelkalns, I., Bisenieks, U., Sánchez-Pato, A., Cánovas-Alvarez, F, J., Figueiredo, A, J., García-Roca, J, A., Leiva-Arcas, A., Meroño, L., Paegle, A., Radu, L, E., Rus, C, M., Rusu, O, M., Sarmiento, H., Stonis, J., Vaquero-Cristóbal, R., Vaz, V., Doupona. M... & More Than Gold Consortium. (2022). Exploring dual career quality implementation at European higher education institutions: Insights from university experts. *Plos One*, 17(11), e0277485. doi:10.1371/journal.pone.0277485
- Kegelaers, J., Wylleman, P., Defruyt, S., Praet, L., Stambulova, N., Torregrossa, M., Kenttä, G., & De Brandt, K. (2022). The mental health of student-athletes: a systematic scoping review. *International Review of Sport and Exercise Psychology*, 1-34. doi: 10.1080/1750984X.2022.2095657
- Kim, H. Y. (2015). Statistical notes for clinical researchers: post-hoc multiple comparisons. *Restorative Dentistry & Endodontics*, 40(2), 172. doi:

- 10.5395/rde.2015.40.2.172
- Linnér, L., Stambulova, N. B., Lindahl, K., & Wylleman, P. (2019). Swedish university student-athletes' dual career scenarios and competences. *International Journal of Sport and Exercise Psychology*, 1-16. doi.org/10.1080/1612197X.2019.1611898
- López de Subijana, C., Barriopedro, M., & Conde, E. (2015). Supporting dual career in Spain: elite athletes' barriers to study. *Psychology of Sport and Exercise*, 21, 57-64. doi: 10.1016/j.psychsport.2015.04.012
- Maciel, L. F. P., Farias, G. O., Dallegrave, E. J., Flach, M. C., do Nascimento, J. V., & Folle, A. (2023). Sports and school involvement and performance: a systematic review of literature. *Retos: nuevas tendencias en educación física, deporte y recreación*, (47), 12-24. doi.org/10.47197/retos.v46.90498
- Maquiaveli, G., Coelho, G. F., Vicentini, L., Oliveira, F. V. C., Ricci, C. S., & Marques, R. F. R. (2021). O desafio da dupla carreira: análise sobre os graus acadêmicos de atletas de elite do futsal feminino brasileiro. *Journal of the Latin American Socio-Cultural Studies of Sport*, 13(19), 54-80. doi:10.5380/jlass.v13i1.80417
- Martins, M., Z., Delarmelina, G. B., Vargas, J. M., Venturelli, S., Antunes, K., & Pelissari, J. (2021). As mulheres e a dupla carreira: linhas tênues entre a conciliação e o abandono esportivo. *Journal of the Latin American Socio-Cultural Studies of Sport*, 13(1), 110-132. doi:10.5380/jlass.v13i1.76885
- Melo, L. B. S. D., Rocha, H. P. A. D., Romão, M. G., Santos, W. D., & Soares, A. J. G. (2020). Dupla carreira: dilemas entre esporte e escola. *Journal of Physical Education*, 31(e3145). doi: 10.4025/jphyeduc.v31i1.3145
- Motta, M. D. C., Lima, L. A. D., Ginciene, G., Hernandez, C. L. D. S., & Galatti, L. R. (2022). Analysis of the sports career of Brazilian international elite squash athletes. *Journal of Physical Education*, 32(e3242). doi: 10.4025/jphyeduc.v32i1.3242
- Moura, G. X. D., Fernandes, A. V., Starepravo, F. A., & Pimentel, G. G. D. A. (2020). The invisibility of women in legislations and National Conferences of sport and leisure in Brazil. *Journal of Gender Studies*, 29(7), 779-790. doi:10.1080/09589236.2020.1770060
- Moyà, S. L. M., Torregrossa, M., Regüela, S., Pérez-Rivas, A., & Ramis, Y. (2017). Competencias para la planificación de la carrera dual de deportistas de alto rendimiento. *Revista de Psicología del Deporte*, 26, suppl. 4, 51-56.
- Nogueira, M. D. (2022). *Transição pós-carreira atlética de maratonistas aquáticos brasileiros: elementos para a elaboração de programa* [Doctoral dissertation, Universidade de São Paulo]. Biblioteca Digital USP.
- Picamilho, S., Saragoça, J., & Teixeira, M. (2023). Análise fatorial exploratória de instrumentos para avaliação da carreira dual: Instrumentos para a avaliação da carreira dual. *Motricidade*, 19(4). doi.org/10.6063/motricidade.31368.
- Pérez-Rivas, A., Pons, J., Regüela, S., Viladrich, C., Palarès, S., & Torregrossa, M. (2020). Spanish female student-athletes' perception of key competencies for successful dual career adjustment. *International Journal of Sport and Exercise*, 1-15. doi: 10.1080/1612197X.2020.1717575
- Postema, A., Van Mierlo, H., Bakker, A. B., & Barendse, M. T. (2022). Study-to-sports spillover among competitive athletes: a field study. *International Journal of Sport and Exercise Psychology*, 1-24. doi.org/10.1080/1612197X.2022.2058054
- Ricci, C. S., Aquino, R., & Marques, R. F. R. (2022). A dupla carreira acadêmico-esportiva na América Latina entre os anos 2000 e 2020: Análise sobre a produção científica publicada em artigos. *Movimento*, 2(e28005). doi: 10.22456/1982-8918.117028
- Rocha, H. P. A. D., Costa, F. R. D., & Soares, A. J. G. (2021). Dupla carreira para estudantes-atletas do turfe: entendendo a dedicação à escola e ao esporte. *Curriculo sem Fronteiras*, 21(3), 1614-1638. doi: 10.35786/1645-1384.v21.n3.32
- Rocha, H. P. A. D., Souza, C. A. M. D., Melo, L. B. S. D., & Soares, A. J. G. (2023). Dupla carreira no Brasil de 2018 a 2023: um panorama dos estudos recentes. *Revista Brasileira de Ciências do Esporte*, 45(e20220045). <https://doi.org/10.1590/rbce.45.e20220045>
- Romão, M. G. (2021). Sucesso e abandono: um estudo de caso no judô. *Journal of the Latin American Socio-Cultural Studies of Sport*, 13(1), 81-98. doi: 10.5380/jlass.v13i1.77022.
- Romar, J. E., Källberg, C., Huuhka, V., & Kuokkanen, J. (2021). The dual commitment of student athletes in lower secondary schools in Finland. *Kinesiology Slovenica*, 27(1), 135-152. doi: 10.52165/kinsi.27.1.135-152
- Santos, T. O., Camargo, P. R., Castro, S. B. E. & Mezzadri, F. M. (2024). Recursos organizacionais e avaliação do apoio à carreira do atleta: adaptando e aplicando a teoria no contexto brasileiro. *PODIUM Sport, Leisure and Tourism Review*, 13(1), 57-82. doi.org/10.5585/podium.v13i1.22147
- Saarinen, M., Phipps, D. J., & Bjørndal, C. T. (2024). Mental health in student-athletes in Norwegian lower secondary sport schools. *BMJ Open Sport & Exercise Medicine*, 10(2), e001955. doi.org/10.1136/bmjopen-2023-026901.70885
- Souza, I. S. D., Oliveira, M. A. D., & Marques, R. F. R. (2023). Entre futebol e escola: uma análise bourdieusiana sobre dupla carreira no Brasil. *Educação & Sociedade*, 44, e269734, doi: 10.1590/ES.269734
- Stambulova, N. B., & Wylleman, P. (2019). Psychology of athletes' dual careers: a state-of-the-art critical review of the European discourse. *Psychology of Sport and Exercise*, 42, 74-88. doi: 10.1016/j.psychsport.2018.11.013
- Stambulova, N., & Ryba, T. V. (2014). A critical review of

- career research and assistance through the cultural lens: towards cultural praxis of athletes' careers. *International Review of Sport and Exercise Psychology*, 7, 1–17. doi: 10.1080/1750984X.2013.851727
- Stambulova, N., Engström, C., Franck, A., Linnér, L., & Lindahl, K. (2015). Searching for an optimal balance: dual career experiences of Swedish adolescent athletes. *Psychology of Sport and Exercise*, 21, 4–14. doi: 10.1016/j.psychsport.2014.08.009
- Stapleton, J. N., & Crandall, R. (2022). Religion: Coping or Cost for Student-Athletes? *Journal of College and Character*, 23(3), 258-266. doi:10.1080/2194587X.2022.2087686
- Tekavc, J., Wylleman, P., & Erpic, S. C. (2015). Perceptions of dual career development among elite level swimmers and basketball players. *Psychology Sport and Exercise*, 21, 27–41. doi: 10.1016/j.psychsport.2015.03.002
- Torregrossa, M., Chamorro, J. L., & Ramis, Y. (2016). Transición de júnior a sénior y promoción de carreras duales en el deporte: una revisión interpretativa. *Revista de Psicología Aplicada al Deporte y al Ejercicio Físico*, 1, 1–10. doi: 10.5093/rpadef2016a6
- Wanzeler, F. S. D. C., Carneiro, F. F. B., & Costa, F. R. D. (2023). Facilitadores e barreiras para a dupla carreira do estudante-atleta de elite: uma revisão integrativa. *Revista Brasileira de Ciências do Esporte*, 45, e20230047. doi.org/10.1590/rbce.45.e20230047
- Wylleman, P. (2019). A developmental and holistic perspective on transiting out of elite sport. In M. H. Anshel, T. A. Petrie, & J. A. Steinfeldt (Eds.), *APA handbook of sport and exercise psychology: Sport psychology* (pp. 201–216). American Psychological Association. <https://doi.org/10.1037/0000123-011>
- Wylleman, P., & Lavallee, D. (2004). A Developmental Perspective on Transitions Faced by Athletes. In M. R. Weiss (Ed.), *Developmental sport and exercise psychology: A lifespan perspective* (pp. 503–523). Fitness Information Technology.
- Wylleman, P., De Brandt, K., & Defruyt, S. (2017). *GEES handbook for dual career support providers (DCSPs)*.

Datos de los/as autores/as y traductor/a:

Guilherme Alves Grubertt	guilherme.grubertt@ifms.edu.br	Autor/a
Felipe Rodrigues da Costa	frcosta@unb.br	Autor/a
Helio Serassuelo Junior	heliojr@uel.br	Autor/a
Sara Márquez	sara.marquez@unileon.es	Autor/a
Elisangela Santos de Carvalho	elisangela.carvalho@ifms.edu.br	Traductor/a