
Strategizing Beyond the Field: Assessing Transferable Skills and Post-Retirement Career Planning among Young Elite Thai Athletes

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Abstract

Due to the extensive time dedicated to sports from an early age, many athletes are unable to allocate time for other activities, and thus struggle to plan for post-sport careers. Since 2005, the International Olympic Committee has initiated the Athlete Career Program, and in Thailand, the Thailand Olympic Academy has been providing educational opportunities for Thai athletes since 2017. However, there is a lack of research on transferable skills and life planning after sports retirement specifically targeting young Thai athletes. The objective of this study is to elucidate the relationship between student athletes' perception of transferable sports skills to explore the application of these skills in their lives after retirement from sports. This study surveyed 92 university student athletes (51 males and 41 females) who participated in 25 Olympic sports at the 30th Manila Southeast Asian Games in 2019. The survey response rate was 100%, and factor analysis and regression analysis were conducted. The results revealed that 'Social and Professional Competence' and 'Collaborative Competence' are key transferable skills from sports, significantly impacting athletes' perception of skill transferability and development confidence. This result provides a valuable framework for developing targeted interventions and educational programs aimed at facilitating successful career transitions for athletes.

Keywords

Career Transition, Olympic Sports, Skill Transferability in Sports, Post-Retirement Planning, Thai Student Athletes

Introduction

Since 2002, the International Olympic Committee (IOC) Athletes' Commission has recognized the significant career transition challenges faced by elite Olympians as they move towards occupational roles following their athletic career. Acknowledging the unique needs of Olympians, the Olympic Movement has prioritized supporting these athletes, with Olympic Solidarity playing a pivotal role in facilitating their transition through the provision of technical and occupational training programs, adequately funded to ensure effectiveness. This initiative, known as the International Olympic Committee Athlete Career Program (IOC ACP), ensures that National Olympic Committees and Olympic athletes gain direct benefits, acquiring essential skills and knowledge for their post-sport professional lives.

Athletic careers are distinct from other professional trajectories in that they typically commence and conclude at a younger age (Baillie, 1993), with cessation often due to fundamental factors such as age, injury, voluntary exit, or deselection (Taylor & Ogilvie, 1994). Consequently, the retirement age for athletes differs substantially from that of the general populace, where retirement does not typically coincide with a period of professional stagnation, as seen in athletic careers (Pearson & Petitpas, 1990). The transition to retirement for professional athletes represents a significant phase often overlooked, as it is an inevitable aspect of an athlete's career (Zaichkowsky et al., 1993). Upon reaching this juncture, athletes are expected to transition from their competitive pursuits to a new lifestyle (Alfermann, 2000). On the other hand, it is frequently observed that athletes do not adequately acknowledge the lessons and competencies developed during their sports careers. This oversight may stem from a narrowed perspective and a constrained sense of identity, which impedes athletes from recognizing the applicability of their sports-acquired skills in various non-sporting career trajectories (Petitpas et al., 1992). Furthermore, concurrently with athletes concluding their participation in high-level competitive sports, their contemporaries frequently embark on careers in non-sporting fields, <https://olympics.com/ioc/athletes-commission> enter into marriage, and start families. This juxtaposition can exacerbate the existing stress associated with the transition from an athletic career (McKnight et al., 2009).

Therefore, it is imperative for athletes to develop a constructive plan for their post-retirement life. However, student-athletes often find themselves in a predicament, having to pause their educational pursuits to focus on athletic goals. This temporary suspension of academic activities is undertaken without considering alternate career paths post-sports retirement, despite a clear understanding of the unsustainable nature of a sports career.

Literature Review

Athletic Transferable Skills

Athletic transferable skills are conceptualized as abstract competencies acquired within a sports setting, which hold relevance for diverse life aspects or alternative professional endeavors (Mayocchi & Hanrahan, 2000). Transferable skills play a pivotal role in facilitating career transitions, empowering individuals to leverage their sports-related learning experiences for application in various aspects of their lives (Mayocchi & Hanrahan, 1997). Consequently, embodying sportsmanship entails recognizing transferable skills as integral to the learning process, particularly in adapting to sports retirement (Sinclair & Orlick, 1993). This perspective allows athletes to prepare and capitalize on the advantages of transferable skills, fostering connections with both amateur and professional communities (Petitpas et al., 1992).

Employers highly value skills that can be transitioned from an athletic to a non-athletic career context. McKnight (2007) and Chalfin (2014) identified numerous transferable skills acquired through sports participation. These include the ability to perform under pressure, goal setting, meeting deadlines and challenges, and self-motivation, all of which align with employer requirements. These findings underscore the relevance of transferable skills acquired in sports to broader occupational needs, enabling athletes to utilize these competencies in various professional domains.

There are several studies regarding the transferable skills that enable the transition from an athletic career to a non-athletic career post-retirement. McKnight (2007) found that 11 skills (ability to perform under pressure, problem-solving skills, teamwork, organizational skills, ability to set and attain goals, ability to meet deadlines/challenges, dedication and perseverance, self-motivation, patience, adaptability/flexibility, and the ability to recognize one's limitations) can be transferred. Good and Troxel (2015) investigated the culture of college athletics departments and the contribution of collegiate sports to the learning and development of student-athletes. Interviews were conducted with 19 former student-athletes from NCAA Division I institutions. The study concluded that almost all participants identified 12 skills and attributes (accountability, time management skills, handling adversity and success, teamwork and collaboration skills, work ethic and dedication, network of close personal relationships, self-motivation, valuing education, interpersonal skills, self-discipline, self-esteem, and critical thinking skills) as significant indicators not only of their athletic success but also as key factors that propelled them to achieve success in their professional lives post-athletics (Good & Troxel, 2015). Chalfin (2014) found that there are 10 skills employers seek in athletes: competitive nature, goal-oriented, ability to handle pressure, strong work ethic, confidence, coachable, ability to work with others, self-motivation, mentally tough, and time management skills. Danish et al. (1993) suggested that researchers found

sport particularly suited to teaching several life skills, including (but not limited to) performing under pressure, organization, communication, patience, risk-taking, commitment, self-control, self-evaluation, decision-making, goal-setting, and motivation. According to Larson (2000), researchers have found that sport participation is associated with personal and social responsibilities, physical well-being, cognitive, emotional, and social well-being, improved self-knowledge, enhanced self-esteem, emotional regulation, problem-solving abilities, goal attainment, coping skills, teamwork, skill development, and offers researchers opportunities to study moral behaviors in athletes. The Transferable Skills Inventory (Shiina et al., 2003) facilitates the identification of skills acquired by student-athletes through sports participation that may have relevance in career-related contexts. These skills encompass communication skills, teamwork skills, leadership skills, ethics and proper conduct, problem-solving skills, self-motivational skills, organizational skills, physical skills and knowledge, coping skills, execution skills, and creativity skills. The specific skills, abilities, and knowledge required for a job can vary depending on the chosen career sector and profession. Employers seek a range of essential skills from newly graduated students, as outlined in a report by Campus-Star in 2018. These skills include commercial awareness, communication, teamwork, negotiation and persuasion, problem solving, leadership, organization, perseverance and motivation, ability to work under pressure, and confidence (Campus-Star, 2018).

Athlete Career Transition Strategies

Danish et al. (1993) focused on environmental factors to foster skill development within organizations. This approach encompasses adapting and making organizational roles more flexible, enhancing endurance, and building capacities related to operations, confrontations, persistence, time management, and achievements (Danish et al., 1993). Concurrently, a notable example of transferable skills is illustrated by hockey players' efforts to acquire specialized knowledge both on and off the ice, particularly in preparation for sports retirement. This involves learning domain-specific skills and applying effective management strategies to facilitate successful outcomes (McKnight et al., 2009).

Furthermore, Schlossberg (1981) employed a transition model that incorporates positive adaptations to aid career transitions in three dimensions. This involves analyzing individual characteristics through the lens of their perceptions of the transition and considering the traits of both pre- and post-transition environments. In the realm of sports, Danish et al. (1993) applied the Life Development Interventions (LDI) Model to address career transitions. One of the main aims of the LDI Model is to assist athletes in preparing for and adjusting to life after sports. This includes career planning, identifying transferable skills, and exploring new opportunities. Danish et al. (1993) identified six critical factors for the generalization of skills across various life domains. These include recognizing the value of their inherent qualities in diverse environments, understanding these qualities as transferable

skills, and being aware of the methods and contexts of their acquisition. Additionally, heightened anxiety in unfamiliar settings, a strong identity tied to sport, and challenges in accessing necessary support systems can significantly impede skill transfer.

Career Transition Challenges for Retired Athletes in Thailand

As the above studies indicate, stakeholders involved with athletes should recognize learning and training systems based on best practices that lead to successful career transitions post-sport retirement. However, in Thailand, there has been a scarcity of research conducted on career transitions following sports retirement. Singprom et al. (2021) found that Thai Olympians have yet to achieve the stability in their lives that is necessary, and there remains a need to enhance welfare to support the athletes' morale and establish life stability. Both executives of sports organizations within Thailand and Thai Olympians have expressed a strong demand for aspects related to profession and career, as well as education.

On the other hand, the International Olympic Committee, the IOC Athletes' Commission and Adecco have been working together since 2005 to deliver the IOC Athlete Career Program (ACP) to support elite athletes as they prepare for and go through their career transition, helping them to achieve success both on and off the field of play (Vasileiadou, 2016). Schlossberg (1981) 'Human Adaptation to Transition' model highlights the importance of providing support to retiring athletes by International/National Federations, National Olympic Committees (NOCs), and other sporting organizations as one of the three crucial factors determining the outcome of a transition.

Thailand represents one of many nations that have successfully managed the ACP. This success is attributed to the Thailand Olympic Academy, operating under the auspices of the National Olympic Committee of Thailand. They have adeptly organized this ACP twice, achieving considerable success. The inaugural event took place on July 8, 2017 (National Olympic Committee of Thailand, 2017), followed by a subsequent event on March 8, 2019 (National Olympic Committee of Thailand, 2019). These initiatives garnered substantial interest from both current student-athletes and retired sports professionals, who participated enthusiastically. These efforts mark a significant first step in providing athletes with the necessary knowledge and understanding. This preparation is crucial for athletes as they transition away from active sports participation (National Olympic Committee of Thailand, 2019).

Building upon this context, the objective of this study is to investigate the perception of transferable skills among young elite Thai athletes regarding their post-retirement careers. This research seeks to understand how these athletes perceive the skills acquired through their sports participation and how they anticipate applying these skills in professional domains after retirement from sports. By exploring the awareness and application of transferable skills, the study intends to contribute to the development of strategies that support Thai student athletes in successfully transitioning to post-athletic careers.

Methods

To investigate the gaps in the application of the LDI model for the skill transfer of student athletes post-sports retirement in Thailand, the researchers employed a quantitative research method and conducted a Thai questionnaire survey of young elite athletes who participated in 25 Olympic sports at the 30th Manila Southeast Asian Games in 2019 composed of Aquatics, Archery, Athletics, Badminton, Basketball, Boxing, Canoe, Cycling, Fencing, Football, Golf, Gymnastics, Handball, Hockey, Judo, Modern Pentathlon, Rowing, Rugby, Sailing, Table Tennis, Taekwondo, Tennis, Triathlon, Volleyball, and Wrestling.

Instrumentation

The goal of this study was to investigate the perception of transferable skills among young elite Thai athletes regarding their post-retirement careers. The researchers created a questionnaire consisting of four parts. The first part gathered general information, the second part asked questions about transferable skills acquired by elite student-athletes through sports participation, and the third part asked questions about awareness of transferable skills among elite student-athletes derived from sports participation.

The research instrument was examined prior to distribution by the Kasetsart University Research Ethics Committee, to ensure content validity and to avoid or mitigate any ethical concerns. It was confirmed there were no ethical concerns (COE No. COE64/086).

Transferable Skills Through Sports Participation

The literature review has led to the conclusion that elite athletes acquire a range of skills, including those expected by employers. These skills, totaling 42 as presented in Table 1, serve as the foundation for creating the research instrument in this study. In the second section of the survey questionnaire, there were questions related to 42 transferable skills obtained from sports, and the participants were asked to rate their level of acquisition for each skill on a 4-point Likert scale (4 = Very high, 3 = High, 2 = Low, 1 = Very low).

The 42 skills listed in Table 1 are derived from various studies that have identified key competencies developed through sports participation and their relevance to the workplace. These studies include works by McKnight (2007), Danish et al. (1993), Larson (2000), Chalfin (2014), Shiina et al. (2003), Good and Troxel (2015), and Campus-Star (2018). These researchers have highlighted the significant overlap between the skills athletes develop and the skills that employers seek. The initial step involved a comprehensive review of the existing literature on transferable skills in sports. Key studies and their findings were analyzed to compile a preliminary list of skills. To ensure the relevance and comprehensiveness of the identified skills, consultations with experts in sports science and career development were conducted. Four experts reviewed the content validity of the list,

providing feedback that helped refine and confirm its validity. A pilot survey was then administered to a small group of young athletes to test the clarity and relevance of the questions. Based on their responses, further adjustments were made to the questionnaire to improve its effectiveness.

Table 1 Skills received from sports participation and skills required from employers

No.	Skills	Researchers						
		McKnight (2007)	Danish et al. (1993)	Larson (2000)	Chalfin et al. (2015)	Shiina et al. (2003)	Good (2015)	Campus -Star (2018)
1	Ability to perform under pressure	√	√		√			√
2	Problem-solving	√		√		√		√
3	Teamwork	√		√		√	√	√
4	Organizational skills	√	√			√		√
5	Ability to set and attain goals	√	√	√	√			
6	Ability to meet deadlines /challenges (Time Management)	√			√		√	
7	Dedication and perseverance	√					√	
8	Self-motivation	√	√		√	√		√
9	Patience	√	√					
10	Adaptability/flexibility	√						
11	Ability to recognize one's limitations	√						
12	Communication skills		√			√		√
13	Risk-taking		√					
14	Self-control		√				√	
15	Self-evaluation		√					
16	Decision-making		√					
17	Personal and social responsibility			√			√	
18	Physical			√		√		
19	Cognitive			√				
20	Emotional			√				
21	Social well-being			√				
22	Improve self-knowledge			√				
23	Improve self-esteem			√			√	
24	Emotional regulation			√				
25	Coping			√		√		
26	Skill development			√				

Table 1 Skills received from sports participation and skills required from employers (continued)

No.	Skills	Researchers						
		McKnight (2007)	Danish et al. (1993)	Larson (2000)	Chalfin et al. (2015)	Shiina et al. (2003)	Good (2015)	Campus -Star (2018)
26	Skill development			√				
27	Competitive Nature				√			
28	Strong Work Ethic				√	√	√	
29	Confidence				√			√
30	Coachable				√			
31	Ability to work with others				√			
32	Mentally Tough				√			
33	Leadership					√		√
34	Execution skills					√		
35	Creativity skills					√		
36	Heading adversity and success						√	
37	Network of close personal relationship						√	
38	Valuing education						√	
39	Interpersonal skills						√	
40	Critical thinking skills						√	
41	Commercial awareness							√
42	Negotiation and persuasion							√

Awareness of Transferable Skills Through Sports Participation

A critical phase in the successful transfer of skills involves addressing athletes' perceptions of their transferable skills. Danish et al. (1993) emphasize that the process of skill transfer commences when athletes recognize that the qualities they have honed in sports are, indeed, transferable skills. This realization is pivotal for initiating the skill transfer process.

In Section 3, this study established questions to assess the awareness level of transferable skills through sports participation. This section was structured around two aspects, based on prior research. The first aspect (*'Perception of Skills as Transferable Across Various Environments'*) consisted of five questions:

1. Do you believe that the transferable skills you receive from participating in sports can be used for other career purposes?
2. Do you feel that the transferable skills you gain from sports participation are personally useful for other career purposes?

3. Do you always consider the importance of the transferable skills you gain from sports participation for other career purposes?
4. Do you regularly remind yourself about the transferable skills you gain from sports participation and their applicability to other career purposes?
5. Do you find that awareness of transferable skills makes it easier to transition to other career purposes?

These questions examined whether the athletes are conscious that these skills originate from athletic or sports participation and are applicable in various professional environments.

The second aspect (*'Confidence and Interest in Learning About Skills'*), also comprised of five questions:

1. Are you interested in learning more about transferable skills?
2. Are you confident that the transferable skills you gain from sports participation can be used for other career purposes?
3. Do you believe that learning about transferable skills will increase your confidence and enable you to use them for other career purposes?
4. Do you worry about the ability to apply the skills gained from sports participation when starting a new career outside of sports?
5. Has awareness of transferable skills significantly aided your transition to other career purposes?

This set of questions focused on assessing the level of confidence and interest in developing adaptable skills through sports participation and learning about these skills. Participants were asked to respond using a four-point Likert scale, where 4 signified 'Strongly Agree,' 3 indicated 'Agree,' 2 represented 'Disagree,' and 1 denoted 'Strongly Disagree.'

Sample

The target population of this study comprised 92 Thai university athletes who participated in 25 Olympic sports at the 30th Manila Southeast Asian Games in 2019. A total of 92 individuals (51 male and 41 female athletes) responded (100% of 92 distributed). All participants signed an agreement indicating that their involvement in this study was voluntary and that their information would remain confidential. No incentives were offered or provided, and no personal information was retained.

Data Analysis

To understand how athletes perceive the skills they have acquired through sports participation, factor analysis was conducted on the responses to sections 2. First, Kaiser's measure of sampling adequacy and Bartlett's test of sphericity were performed on the data (Tabachnick & Fidell, 2013). Specifically, the researchers conducted an exploratory factor analysis (EFA), using maximum likelihood estimation with Promax rotation. The factors and

items were examined based on the following criteria: Factors with eigenvalues greater than 1.0, Factor-loading equal to or greater than 0.40 without multiple loadings on two or more factors, and Factors that were interpretable in terms of loaded items.

To clarify the relationship between the transferable skills through sports participation and athletes' awareness of these skills, regression analysis was conducted. For this analysis, scores for the two aspects ('*Perception of Skills as Transferable Across Various Environments and Confidence*' and '*Interest in Learning About Skills*') in Section 3 were calculated (averaging across five items) and used as dependent variables, while the factors identified in Section 2 served as independent variables. Additionally, regression analysis was also performed between the two aspects identified in Section 2. SPSS 28.0 for Windows was used for analysis in this study.

Results

Factor Analysis for Transferable Skills Through Sports Participation

The data's suitability for factor analysis was first assessed using Kaiser's Measure of Sampling Adequacy (KMO) and Bartlett's Test of Sphericity. The KMO test yielded a value of 0.722, which is above the commonly recommended threshold of 0.60, indicating that the sample was adequate for factor analysis. This high KMO value suggests that the patterns of correlations between variables were relatively compact and therefore suitable for factor analysis. Additionally, Bartlett's Test of Sphericity was significant ($\chi^2 = 1953.210$, $df = 861$, $p < 0.001$), indicating that the correlation matrix was not an identity matrix and that the variables were sufficiently related to each other to proceed with factor analysis. These results provided a sound statistical basis for conducting an exploratory factor analysis on the dataset.

In light of this result, Exploratory Factor Analysis (EFA) was conducted to investigate the underlying structure of the dataset. The analysis yielded a five-factor solution, which explained a total of 66.793% of the variance. The first factor, labeled as 'Personal Development and Performance Competencies,' accounted for 36.588% of the variance, the competencies and characteristics encompassed here—emotional regulation, self-control, awareness of personal limitations, and robust professional ethics—correlate with an individual's proficiency in self-management and upholding discipline within their vocational responsibilities. The second factor, termed 'Self-Regulation and Work Discipline,' explained 10.712% of the variance, the skills and traits reflected here include emotional control, self-regulation, the ability to recognize one's own limitations, and a strong work ethic, which are all indicative of an individual's capacity for self-management and discipline in professional duties. The third factor, named 'Social and Professional Competence,' accounted for 7.186% of the variance, the skills and attributes such as commercial awareness, political acumen, a

network of close personal relationships, negotiation and persuasion abilities, and social well-being are indicative of an individual's capacity for effective functioning within social and professional contexts. The fourth factor, named 'Collaborative Competence,' accounted for 6.302% of the variance. The fifth factor, named 'Psychological Resilience,' accounted for 6.004% of the variance.

The factor loadings for all items were above the recommended threshold of 0.4, indicating a strong association with their respective factors. Cronbach's alpha coefficients for the three factors were 0.913, 0.817, 0.760, 0.818, and 0.707. Following the guidelines suggested by Nunnally (1975), a Cronbach's alpha coefficient of 0.7 is considered an acceptable level of reliability for scales used in social science research. The factorial structure, factor loading, and intercorrelations among the transferable skills acquired factors are illustrated in Table 2.

Table 2 Result of Factor Analysis for Transferable Skills Through Sports Participation

Factors	Factor					Cronbach's
Corresponding items	1	2	3	4	5	Alpha
Personal Development and Performance Competencies						0.913
Ability to set attainable goals	0.794	-0.269	0.025	-0.032	0.187	
Improve self-knowledge	0.757	0.136	0.159	-0.090	-0.285	
Improve self-esteem	0.751	-0.065	0.108	0.120	-0.030	
Execution	0.721	0.183	-0.001	-0.115	-0.033	
Organizational	0.702	-0.105	0.080	-0.012	0.126	
Self- development	0.679	0.101	-0.143	0.035	0.080	
Competitive Nature	0.668	0.042	-0.042	-0.034	0.072	
Ability to meet deadlines / Time Management	0.667	0.101	-0.171	-0.009	0.104	
Personal and social responsibility	0.646	-0.059	-0.164	0.212	-0.026	
Critical thinking	0.526	0.199	0.080	0.002	0.116	
Self-Regulation and Work Discipline						0.817
Emotional Control	-0.118	0.804	0.092	0.040	-0.035	
Self-control	0.006	0.772	-0.193	0.046	0.152	
Ability to recognize one's limitations	0.106	0.739	0.142	-0.092	-0.129	
Strong Work Ethic	0.154	0.571	0.034	0.201	0.011	
Social and Professional Competence						0.760
Commercial awareness	0.158	-0.090	0.850	0.038	-0.199	
Political	-0.115	0.003	0.666	-0.067	-0.127	
Network of close personal relationship	-0.136	0.178	0.654	-0.126	0.246	

Table 2 Result of Factor Analysis for Transferable Skills Through Sports Participation (continued)

Factors	Factor					Cronbach's Alpha
	1	2	3	4	5	
Corresponding items						
Negotiation and persuasion	0.016	-0.109	0.577	0.157	0.226	
Social well-being	-0.111	0.183	0.464	0.108	0.207	
Collaborative Competence						0.818
Ability to work with others	0.041	-0.042	0.136	0.869	0.002	
Teamwork	0.005	0.130	-0.113	0.790	-0.074	
Psychological Resilience						0.707
Self-confidence	0.200	0.042	0.048	-0.197	0.788	
Mentally Tough	0.085	-0.040	0.012	0.137	0.646	
Factor Intercorrelations						
I	–	0.582	0.381	0.457	0.399	
II		–	0.363	0.289	0.244	
III			–	0.179	0.039	
IV				–	0.306	
V					–	

Note. Extraction method was maximum likelihood; rotation method included Promax with Kaiser normalization; rotation converged in six iterations; loading >.040 are shown in **bold**.

Regression Analysis for the Relationship between the Transferable Skills and Awareness

First, subscale scores were calculated for each identified factor by taking the average of the items constituting the respective factor. For instance, the ‘Personal Development and Performance Competencies’ subscale was composed of ten items, and the subscale score was determined by computing the mean of these ten item scores. The subscale scores, calculated as the average of items constituting each factor, were utilized as independent variables in a multiple regression analysis. Similarly, for the two aspects in Section 3, the average of the five items was calculated for each and used as dependent variables. The descriptive statistics for the variables used are presented in Table 3, no ceiling or floor effects were observed in any of the variables.

Table 3 Variable Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Independent Variables (Transferable Skills Through Sports Participation)					
Personal Development and Performance Competencies	80	2.20	4.00	3.290	0.475
Self-Regulation and Work Discipline	83	1.75	4.00	3.247	0.516
Social and Professional Competence	77	1.60	4.00	2.652	0.556
Collaborative Competence	88	1.50	4.00	3.364	0.561
Psychological Resilience	87	1.50	4.00	3.195	0.597
Dependent Variables (Awareness of Transferable Skills Through Sports Participation)					
Perception of Skills as Transferable Across Various Environments	89	2.00	4.00	3.049	0.512
Confidence and Interest in Learning About Skills	89	1.20	4.00	3.083	0.482

The results of the multiple regression analysis with ‘*Perception of Skills as Transferable Across Various Environments*’ as the dependent variable demonstrated a significant model fit ($F(5, 64) = 5.669, p < .001$). The R^2 value was .253, indicating that 25.3% of the variance in the dependent variable was explained by the predictor variables. Specifically, ‘*Social and Professional Competence*’ ($\beta = .348, p < .01$) and ‘*Collaborative Competence*’ ($\beta = .309, p < .01$) were found to be significant, while ‘*Personal Development and Performance Competencies*’ ($\beta = -.111, p = .452$), ‘*Self-Regulation and Work Discipline*’ ($\beta = .074, p = .559$), and ‘*Psychological Resilience*’ ($\beta = .156, p = .196$) were not. The VIF values were all below 5, suggesting no multicollinearity issues. These findings suggest that both ‘*Social and Professional Competence*’ and ‘*Collaborative Competence*’ are important factors in explaining the variation in the dependent variable.

The multiple regression analysis was conducted with ‘*Confidence and Interest in Learning About Skills*’ as the dependent variable. The results indicated that the model did not fit significantly, as evidenced by the F statistic ($F(5, 65) = 2.304, p = .054$). The R^2 value was .085, suggesting that only 8.5% of the variance in the dependent variable could be explained by the predictor variables. This indicates that the predictor variables (‘*Personal Development and Performance Competencies*,’ ‘*Self-Regulation and Work Discipline*,’ ‘*Social and Professional Competence*,’ ‘*Collaborative Competence*,’ and ‘*Psychological Resilience*’) did not significantly contribute to the explanation of variance in ‘*Confidence and Interest in Learning About Skills*.’ These findings suggest that further investigation is needed to understand the factors influencing ‘*Confidence and Interest in Learning About Skills*.’

Subsequently, a simple linear regression analysis was performed with ‘*Confidence and Interest in Learning About Skills*’ as the dependent variable and ‘*Perception of Skills as*

Transferable Across Various Environments' as the independent variable. The results indicated a significant relationship between the two variables ($F(1, 86) = 33.530, p < .001$). The regression coefficient for '*Perception of Skills as Transferable Across Various Environments*' was $.530 (t = 5.791, p < .001)$, suggesting a positive association. The R^2 value was $.281$, indicating that 28.1% of the variance in '*Confidence and Interest in Learning About Skills*' was accounted for by '*Perception of Skills as Transferable Across Various Environments*.'

Discussions

Based on the aforementioned results, there are three salient points to be emphasized.

Identification of Key Factors

The exploratory factor analysis (EFA) identified five key factors through the lens of transferable skills gained from sports participation: 'Personal Development and Performance Competencies,' 'Self-Regulation and Work Discipline,' 'Social and Professional Competence,' 'Collaborative Competence,' and 'Psychological Resilience.' These factors form the foundation of transferable skills that athletes acquire through sports participation. The findings from the exploratory factor analysis, demonstrating the presence of distinct factors align well with the existing literature that underscores the importance of transferable skills in athletic contexts.

The literature indicates that skills like emotional regulation, self-control, awareness of personal limitations, and strong work ethic, which are part of the 'Personal Development and Performance Competencies' factor, are crucial for athletes in managing the transition from sports to other professional fields. This is consistent with the studies by Danish et al. (1993) and Petitpas et al. (1992), which highlight the need for athletes to adapt their skills to diverse environments, especially in the context of sports retirement.

Moreover, the relevance of 'Social and Professional Competence' and 'Collaborative Competence,' as revealed in this study, echoes the findings of McKnight (2007) and Good and Troxel (2015), who identified similar skills as critical for athletes in their post-athletic career. These skills, such as commercial awareness, negotiation abilities, and teamwork, are highly valued by employers and are essential for successful integration into non-athletic professions.

The study's results also align with Schlossberg (1981) transition model and the LDI Model applied by Danish et al. (1993), emphasizing the need for athletes to develop a broad range of skills and to prepare for life after sports. This preparation includes identifying transferable skills, career planning, and exploring new opportunities, which are vital for a smooth transition.

Furthermore, the high reliability coefficients obtained in this study for the identified factors indicate that transferable skills are consistently perceived as valuable by the athletes. This consistency in perception is crucial for athletes to effectively leverage these skills in various professional domains post-retirement.

Association with Transferable Skills

The significant model fit ($F(5, 64) = 5.669, p < .001$) and the R^2 value of .253 in the analysis suggest that 'Social and Professional Competence' and 'Collaborative Competence' are crucial in understanding the perception of skills as transferable across various environments. This finding aligns with the literature emphasizing the versatility of skills acquired in sports settings and their applicability in diverse professional contexts. For instance, the studies by McKnight (2007) and Chalfin (2014) highlighted similar skills as essential in transitioning from an athletic to a non-athletic career. The importance of social skills and the ability to collaborate effectively, as shown in this study, resonates with these findings, underlining their relevance in post-sport career transitions.

However, the lack of significant model fit in the analysis of '*Confidence and Interest in Learning About Skills*' ($F(5, 65) = 2.304, p = .054$) with an R^2 value of .085 indicates that the predictor variables, including 'Personal Development and Performance Competencies,' 'Self-Regulation and Work Discipline,' and 'Psychological Resilience,' do not significantly contribute to explaining variations in confidence and interest in learning. This suggests a gap in the current understanding of how these specific transferable skills influence athletes' motivation and confidence in learning new skills. This finding calls for further research, possibly exploring other factors that might influence athletes' confidence and interest in learning, such as environmental factors, support systems, and individual differences in learning preferences.

While the study reinforces the significance of 'Social and Professional Competence' and 'Collaborative Competence' in athletes' perception of their skills being transferable to various environments, it also highlights the need for further exploration into how different aspects of transferable skills influence athletes' confidence and interest in learning. This insight could be crucial in designing targeted interventions and educational programs that effectively address the broader range of skills and factors affecting athletes' successful transition to post-athletic careers.

Relationship between Perception of Skill Transferability, Confidence and Interest in Learning

The literature extensively discusses the importance of transferable skills in athletes' careers, emphasizing how these skills, once acquired in a sports context, can be effectively utilized in various non-athletic professional environments. This study's findings, particularly

the significant relationship between the *perception of skills as transferable across various environments* and the athletes' confidence and interest in learning ($F(1, 86) = 33.530, p < .001$), align well with these assertions. The positive association, as indicated by the regression coefficient of .530 ($t = 5.791, p < .001$), underscores that when athletes perceive their skills as adaptable and relevant in diverse settings, it significantly enhances their confidence in these skills and their willingness to learn more about them. This aligns with the findings from prior research, such as those by McKnight (2007) and Good and Troxel (2015), which highlight the range of transferable skills athletes acquire and the importance of these skills in various professional domains post-retirement.

Furthermore, the R^2 value of .281 indicates that nearly 28.1% of the variance in athletes' confidence and interest in learning about skills can be explained by their perception of the transferability of these skills. This finding suggests that enhancing athletes' understanding of how their sports-related skills can be applied in different career contexts could significantly boost their motivation to engage in lifelong learning and personal development. It also supports the notion presented by Danish et al. (1993) and Petitpas et al. (1992) regarding the need for athletes to adapt their skills to diverse environments, particularly when transitioning from sports to other professional fields.

This study reinforces the idea that recognizing the transferability of skills acquired through sports is crucial for athletes not only in terms of career transition but also in fostering their confidence and interest in continuous learning and development. This insight is invaluable for designing effective educational and career support programs for athletes, ensuring that they are well-prepared for the challenges and opportunities of post-athletic careers. Thus, it implies that when athletes perceive their skills as versatile and applicable in multiple contexts, it not only boosts their self-confidence but also kindles a greater interest in pursuing further learning and development opportunities. Such an enhanced perception of skill transferability could be instrumental in encouraging athletes to engage more actively in their personal and professional development, exploring areas beyond their immediate athletic expertise.

Moreover, this relationship underscores the importance of educational programs and interventions that focus on broadening athletes' understanding of how their skills can be adapted and utilized in various non-sporting contexts. By fostering this awareness, athletes can be better prepared for life after sports, equipped with a more versatile skill set that is valuable in multiple career paths. This adaptability is crucial, especially in a rapidly changing job market where flexibility and diverse skill sets are increasingly valued.

Additionally, the study's findings suggest that providing athletes with adequate support and resources to explore and develop their transferable skills could have a profound impact on their overall career trajectory. Such support should not only be limited to the

duration of their athletic career but should also extend into their transition phase and beyond, ensuring a continuous learning curve that facilitates their integration into different professional roles.

Limitations of the Study

One of the primary limitations of this study is the sample size used for the EFA. Although the study utilized a population group of 92 university student athletes who participated in 25 Olympic sports at the 30th Manila Southeast Asian Games in 2019, the sample size does not meet the commonly recommended criteria for EFA. Typically, a sample size with a subject-to-variable ratio of at least 10:1 is advised to ensure the stability and validity of the factor structure. In this study, the ratio is significantly lower, falling below 5:1.

This insufficient sample size may lead to unstable or overfitted factor structures, which can compromise the reliability and generalizability of the findings. Specifically, the factor loadings might be less stable, and the identified factors may not accurately represent the underlying constructs in a broader population.

To address this limitation, future research should aim to include a larger sample size that adheres to the recommended guidelines for EFA. By doing so, the stability and validity of the factor structures can be enhanced, leading to more robust and generalizable findings. This would provide a stronger foundation for understanding the transferable skills of athletes and developing effective post-retirement career support programs.

Conclusion

This study reinforces the existing literature by providing empirical evidence on the significance of transferable skills for young elite Thai athletes. It highlights the necessity for stakeholders in Thai sports organizations to focus on enhancing athletes' awareness and development of these skills. Such an approach is not only crucial for the athletes' successful transition to post-athletic careers but also beneficial for their overall personal and professional development.

This study advocates for the critical role of providing enhanced learning opportunities and skill development initiatives as a cornerstone in empowering athletes to broaden their career perspectives beyond sports. The availability of supplementary learning resources and specialized skill enhancement programs is indispensable in bolstering athletes' potential for successful transitions to post-athletic careers. Such a strategic approach is instrumental in enabling athletes to judiciously select career paths post-retirement that are not only aligned with their skill sets but also offer significant growth opportunities and advancement prospects. This proactive planning paves the way for a more secure and flourishing future, extending well beyond the realm of their athletic endeavors.

The research particularly highlights the importance of 'Social and Professional Competence' and 'Collaborative Competence' as fundamental transferable skills among young elite Thai athletes. These competencies play a substantial role in influencing the athletes' capacity to repurpose their sports-acquired skills to diverse professional contexts, as well as bolstering their confidence throughout this transformative journey. The alignment of these findings with the insights of Petitpas et al. (1992) reinforces the notion that athletes who adeptly identify and apply these transferable skills are more inclined to navigate the transition to post-sport careers with positivity and ease.

The significance of this study is anchored in its emphasis on the necessity for athletes to identify, cultivate, and finesse these transferable skills, thereby smoothing the path to retirement. This perspective resonates with Petitpas et al.'s (1992) assertion that athletes, who adeptly harness their sports-derived transferable skills, generally experience a more effortless and affirmative shift to careers beyond sports.

Consequently, it is paramount that the support systems and educational frameworks designed for athletes incorporate elements that focus keenly on the identification, development, and practical application of these transferable skills. This approach not only readies athletes for their imminent departure from the sports world but also arms them with the essential tools and self-assurance needed to thrive in their future professional endeavors. Ultimately, such preparation plays a pivotal role in enhancing the overall well-being and career fulfillment of athletes in their life after sports, marking a transition that is as rewarding as it is transformative.

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