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The Hierarchy of Sustainable Sports Coaching Competencies in Korea

Jusun Jang [1,†], Wi-Young So [2,†], Namki Cho [3,*,‡] and Minhye Shin [4,*,‡]

[1] Department of Sports Science, Hanyang University ERICA, Ansan 15588, Republic of Korea; jjangjs77@hanyang.ac.kr
[2] Sports Medicine Major, College of Humanities and Arts, Korea National University of Transportation, Chungju-si 27469, Republic of Korea; wowso@ut.ac.kr
[3] Department of Physical Education, Sookmyung Women's University, Seoul 04310, Republic of Korea
[4] Department of Sports Convergence, Kyungil University, Gyeongsan 38428, Republic of Korea
* Correspondence: nc104@sookmyung.ac.kr (N.C.); minhye@kiu.ac.kr (M.S.); Tel.: +82-10-5279-5485 (N.C.); +82-10-7190-0314 (M.S.)
† These first two authors (Jusun Jang and Wi-Young So) contributed equally to this work.
‡ The corresponding two authors (Namki Cho and Minhye Shin) contributed equally to this work.

Abstract: This study aimed to identify the significant overarching sports coaching competencies and their underlying components in contemporary Korean society and into the future. In addition, the hierarchical order of these competencies and components was investigated to assess their relative importance. This knowledge can improve pre-service and in-service sports coach training programs and their sustainability. A literature review in Korean and English related to sports coaching was performed initially to understand which competencies and components have already been researched and recognized. The subsequent study surveyed 20 experts using the Delphi process and 28 experts using the analytic hierarchy process (AHP), considering seven sports competencies and 23 components based on the literature. All the competencies and components were considered appropriate sustainable measures of a sports coach's competence based on the Delphi content validity ratio (CVR) > 0.500. The AHP results ranked "pedagogical" competence the highest, with a weight of 0.329 in the competence hierarchy, while "operational and managerial" competence ranked at the bottom with a weight of 0.057. In relation to the rank order of the components under each competence, "pedagogical communication" (0.136) and "sport-specific skill performance" (0.086) ranked first and second, respectively. In contrast, "facilities and equipment management" (0.008) ranked at the bottom and "public relations and marketing" (0.008) ranked right above it. The values of the consistency index and the consistency ratio were <1.000, indicating that the competencies and components hierarchies were reliable. The results confirm that in Korea's pre- and in-service sports coach training programs, comprehensive and in-depth pedagogical knowledge, as well as sports knowledge in areas like sports biomechanics, sports physiology, and sports nutrition, need to be reinforced for ongoing success.

Keywords: analytic hierarchy process; competence; Delphi; pedagogy; sports coach; sustainable sports coaching competencies; Korea

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1. Introduction

Our study considers the Korean community and, within that context, looks at sports coaches, their competencies, and the components of those competencies. The role of a sports coach is considered crucial, whether for amateur sports participants [1–3] or elite athletes [4–6], as it significantly influences the quality of participation for amateurs and the performance level of elites. Furthermore, the expectations regarding what a sports coach should do and how they should do it have undergone changes over time, driven by societal, economic, political, industrial, and cultural factors. In terms of psychosocial

development within a sports setting, the expected role of a sports coach has evolved. In the early and mid-1900s, the emphasis was on fostering qualities like cooperation, respect, and sincerity among amateur participants. However, in the era of the third and fourth industrial revolutions, the focus has shifted towards motivating, nurturing creativity, exhibiting leadership, encouraging challenge, and promoting self-regulation [7–9]. Therefore, it is imperative that the system for qualifying and educating sports coaches, both in pre- and in-service training, aligns with contemporary societal demands. Failure to do so might reduce sports coaches to mere technicians responsible for teaching skills and maintaining facilities and equipment.

Korea has been regarded as a rapidly changing society, and its value system and culture have changed in line with this societal transition. The personal competencies compatible with such societal, cultural, and value changes have also evolved. Our objective was to better understand these in terms of sports coaching effectiveness to help improve the associated training programs and qualification tests in Korea. Understanding what competencies sports coaches need to improve, especially at the onset of the fourth industrial revolution era, can increase the sustainability of these occupational capabilities. To that end, we first reviewed the literature to identify sports coach competencies and their underlying components. We then conducted surveys of Korean experts to confirm the top competencies needed and to create hierarchies of their importance.

1.1. Definition of a Sports Coach

The term "sports coach" can encompass many responsibilities and roles. Primarily, this person is responsible for encouraging, guiding, and instructing participants in learning or improving their skills in traditional or new sports, whether professionally or for leisure enjoyment. Depending on the cultural, historical, or societal contexts of the community, this person could also be called a sports instructor, physical activity leader, or something similar. The roles and responsibilities of the person may also differ based on the sport he/she teaches, the participants involved (e.g., age group, fitness level), and their reasons for participation. However, despite such diversity, these individuals are responsible for encouraging participants to perform well and supporting them in achieving their goals in a sports setting. In our study in Korea, we use the term "sports coach," as it is widely applied in the US, the UK, Australia, and the European Union [10–14]. It speaks to the person's identity, role, and accountability.

In Korea, a sports coach is defined as "a person certified by the National Sports Promotion Act, who helps, guides, leads, and instructs people in school, the community, workplace, or private facilities to participate with spontaneity in sports, exercise, sport-oriented recreation, outdoor leisure and physical activity for enhancement of their physical fitness, mental health and sport skills" [14]. As such, a sports coach is expected to have certain skills, knowledge, and experience. These coaches should be capable of enhancing each participant's performance, fitness, and conditioning, influencing club marketing, management, and administration [15–17], and instilling desirable values, attitudes, and behaviors in the participants based on the definitions and roles described in the US, UK, Australia, and European Union policy and guidebooks and the Act for a sports coach as legislated in Korea.

The definitions, roles, and codes of conduct, as delineated in the policies and guidebooks and the Act in Korea, are fundamentally similar, as the ultimate goals of sports coaching, no matter where it occurs, are much the same: first, to target individual's/members' spontaneous, active, and consistent participation, and, second, to support their performance improvement, fitness, and mental and physical health. The above-referenced documents include references to "participants," "sports," "coaching," "social context," and "self" and developing ethically and professionally appropriate experiences, attitudes, and behaviors. Thus, the sports coach's expertise or competence needs to encompass these. As such, pre-service and in-service sports coach training programs, as well as certification or qualification tests, should examine whether such individuals have comprehensive and

sustainable sport-related, pedagogical, and contextual knowledge, proficiency in sports skill performance, and appropriate attitudes and behaviors.

1.2. Sports Coach Competence

Competence, in general, is defined as one's knowledge, skills, and other psychosocial characteristics, such as leadership, cooperation, responsibility, persistence, and empathy, that manifest in one's attitude, behavior, and performance [18–22]. In this context, the concept of expertise, which emphasizes knowledge and skills, is substituted with competence, as it holds greater significance in understanding holistic human performance [23,24]. Thus, the competence for any position in the sports-related vocational field, including that of the sports coach, consists of a combination of knowledge, skills, and certain psychosocial senses [21,22,25–28]. However, sports coach competency and its components could differ from one community to another since this competency may reflect the cultural, historical, societal, economic, and political contexts of the community [29–33]. Similarly, the relative importance of each required competence and its components could differ according to this context. For instance, people in communities that indulge in rivalry matches may feel and act differently than those who look down on competitive sports. This is why each community has its own guidebooks and Acts to address coaching competence.

In assessing coaching competency, we need to consider people's participation in sports, exercise, or physical activity, whether it occurs spontaneously, actively, or consistently, before identifying a coach's competency requirements. Coaching competence includes not only cognitive and psychomotor capabilities, including knowledge about the sport, pedagogical expertise, and motor performance, but also psychosocial traits such as empathy, leadership, and coordination. These competencies are essential for promoting individuals' spontaneous, active, and sustained participation [34,35]. This means that it is important that both sports coaches and sports participants understand which coaching competencies are significant to a particular community. In addition, among these, it is important to identify which competencies are more important than others for ongoing successful coaching, and, thus, for the foundation of the development of future in-service sports coach training programs and sports coach certifications and qualification tests.

2. Materials and Methods

2.1. Data Collection

The study was conducted in accordance with the principles outlined in the Declaration of Helsinki, and it was approved by the Institutional Review Board of the Sookmyung Women's University (IRB approval number: SMWU-2303-HR-002-01; approval date: 24 April 2023). To achieve our aims, we completed a literature review and then conducted surveys using the Delphi and analytic hierarchy processes (AHP). In the literature review, we examined previous studies, guidebooks, government reports, legislative acts, and other related documents to identify and sort through feasible coaching competencies and their components.

We began by reviewing the government reports and guidebooks published in Australia, Europe, the UK, the US, and the Acts legislated in Korea [10–14]. We also scrutinized previous studies regarding coaching competence [31,32,36–40]. In general, based on our review, coach competencies could be classified into six categories: coaching philosophy and ethics, sports knowledge and performance, pedagogical knowledge and performance, organizational and managerial knowledge and performance, relationship management, and safety management. Consequently, in our study, we adopted seven competencies, dividing sports knowledge and performance into separate competencies. Many previous studies have separated these as well. For each competency, we identified three to four components based on our literature review. Table 1 presents each competency, its operational definition, and its components. In the second stage, we engaged a panel of 20 experts for the Delphi analysis to confirm the appropriateness of each competency and its components. In the third stage, to identify the hierarchical order of the competencies

and the components, we used the AHP with 28 experts (Expert Choice ver. 11.5, Expert Choice, Inc. VA, Arlington, USA).

Table 1. Operational definition of sports competence and its component.

Sports Coach Competence	Operational Definition	Components
Sports performance competence	Fundamental and sport-specific fitness and performance	Sport-specific skill performance
		Fundamental fitness
		Sport-specific fitness
Sports knowledge competence	Sport-specific knowledge	Sport-specific science knowledge
		Sport-specific humanities knowledge
		Sport-specific coaching knowledge
Pedagogical competence	Pedagogical communication, demonstration, and observation/understanding of participant and context	Pedagogical communication
		Demonstration
		Observation
		Understanding of participant and coaching contexts
Operational and managerial competence	Management and marketing for organization and member/facilities and equipment operation and management	Club management
		Member management
		Public relations and marketing
		Facilities and equipment management
Philosophical and ethical competence	Beneficiary-centered philosophy, ethics, and enthusiasm	Member-centered philosophy
		Coaching enthusiasm
		Coaching ethics
Relationship management competence	General communication and counseling based on empathy and understanding/self-management	General communication and counseling
		Self-management and development
		Empathy and understanding
Safety management competence	Sense of safety/physically and psychologically safe settings/first aid	Safe setting management
		First aid
		Self and participant's sense of safety

2.2. Participants and Measures

In the Delphi analysis, the expertise of the participants needs to be considered to increase the accuracy of the results [41]. As stated above, for our Delphi analysis, we recruited 20 experts (7 females and 13 males), and for the AHP, we recruited 28 experts (9 females and 19 males) with five or more years of sports coaching or teaching experience; of these, 2 experts had sports-related master degrees and the rest had doctoral degrees in sports coaching or physical education. Every participant in both the Delphi analysis and the AHP falls within the age range of 40 to 59, with an average career span of 12 years. We contacted the presidents of the Korean Society of Sport Coaching and the Korean Society for the Study of Physical Education, requesting recommendations for our study participants: 55 experts were recommended, and 48 out of 55 responded positively. Each participant was provided with an explanation of the study's overall process and was given the option to choose which survey to participate in. We also provided detailed information regarding participant anonymity and the disposal date of the collected data as part of the survey administration protocol. Informed consent forms were distributed to both the Delphi and AHP participants before the survey administration. The sports these participants had coached or taught were diverse, including archery, badminton, basketball, soccer, and

volleyball. As a result, our study did not address how a specific sport influenced the participants' competency choices or the components or the hierarchy.

A Delphi survey was conducted face-to-face with the 20 participants from 22 May 2023 to 26 May 2023. In each meeting, the purpose of the study and the participants' rights were explained. Then, a consent form was filled out for participation. In our questionnaire survey, we asked the participants to consider the appropriateness of seven sports coach competencies and three to four components using a five-point Likert scale. We also asked the participants whether they saw any similar or redundant competencies or components. Table 2 presents an example of our Delphi survey using "operational and managerial" competence.

Table 2. Delphi survey of the appropriateness of the operational and managerial competence and its components.

Sports Coach Competence	Definition	Components	①	②	③	④	⑤
			Very Inappropriate	**Inappropriate**	**Neutral**	**Appropriate**	**Very Appropriate**
Operational and managerial competence	Management and marketing for organization and member/facilities and equipment operation and management	Club management	①	②	③	④	⑤
		Member management	①	②	③	④	⑤
		Public relations and marketing	①	②	③	④	⑤
		Facilities and equipment management	①	②	③	④	⑤

Following the Delphi survey, we conducted the AHP with 28 experts to assess the hierarchical order of these sports coach competencies and their components from 1 July 2023 to 14 July 2023. As with the Delphi survey, explanations and documentation were provided to the participants before the survey began. Two different paired comparative tables were presented to the participants: one was to find out the relative significance of each sports coach's competence and the other was for the significance of the components. Before conducting an analysis using paired comparative tables, a hierarchical tree is generally provided. This step was skipped in our study since both the literature review and the Delphi process served to replace this [41,42]. The AHP survey was carried out in a face-to-face setting as well. The participants were asked to prioritize the competencies and the components using the paired comparative table on a nine-point scale, as shown in Table 3, from the middle to the right end and from the middle to the left end. Table 3 provides an example comparing the relative significance between the two competencies. A verbal guide on how to mark the paired comparative table was provided to every participant until each participant became familiar with it.

Table 3. Paired comparative table for analytic hierarchy process.

Significance of Sports Coach Competency between Two Competencies																		
Sports coach competence A	A is more significant								Same		B is more significant							Sports coach competence B
	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	

2.3. Data Analysis

As stated above, the literature review revealed six sports coach competencies, and we split one into two to arrive at seven. Consequently, in the Delphi and AHP analyses, we

used seven competencies and 23 components. We analyzed the Delphi data using SPSS (Version 22; IBM Corp., Armonk, NY, USA) and also checked the reliability with the content validity ratio (CVR) for every sports coach's competence and its components. The value of the CVR showed the agreement level and the validity of each competence and component. The following formula calculates the CVR [43]:

$$\mathrm{CVR} = (\mathrm{Ne} - N/2)/(N/2)$$

Ne: number of answers for "appropriate."
N: number of participants.

Table 4 presents the minimum value of CVR according to the number of participants [44,45]. The CVR value should be >0.420 with 20 participants.

Table 4. The no. of participants and corresponding minimum CVR values.

No. of Participants	The CVR Minimum Value
7	0.99
8	0.78
9	0.75
10	0.62
11	0.59
12	0.56
13	0.54
14	0.51
15	0.49
20	0.42
25	0.37
30	0.33
35	0.31
40	0.29

As stated, through the AHP, we calculated the weight of each competency and its components to identify the hierarchical order. The consistency of the scores in the paired comparative table is demonstrated by the values of the consistency index (CI) and the consistency ratio (CR). The values of CI and CR need to be <0.100 [42,45]. The following formulas calculate the CI and CR:

$$\mathrm{CI} = (\lambda\mathrm{max} - \mathrm{n})/(\mathrm{n} - 1)$$

λmax: principal eigenvalue.
n: matrix size (number of participants).

$$\mathrm{CR} = \mathrm{CI}/\mathrm{RI}$$

CI: Consistency index.
RI: Random index.

3. Results

3.1. Literature Review

We conducted a comprehensive review of more than 20 articles, three books, and five reports to identify the competencies required by contemporary sports coaches to meet the demands of both amateur and elite sports participants. During the initial stage, all researchers collaborated to categorize the competencies extracted from the literature review, resulting in the identification of six core competencies: coaching philosophy and ethics, sports knowledge and performance, pedagogical knowledge and performance, organizational and managerial knowledge and performance, relationship management, and safety management. To ensure the accuracy and appropriateness of each competency's

classification, pairs of researchers engaged in constructive critique, leading to the refinement of the competencies. Specifically, we divided "sport knowledge and performance" into two distinct categories: "sport knowledge" and "sport performance." As a result, we established a comprehensive set of seven competencies: coaching philosophy and ethics, sports knowledge, sports performance, pedagogical knowledge and performance, organizational and managerial knowledge and performance, relationship management, and safety management.

3.2. Delphi: The Appropriateness of the Sports Coach Competencies and the Components

The Delphi analysis demonstrated that all the sports coach competencies and components we identified were considered sustainable and appropriate. "Sports knowledge" competence had the highest mean (4.60), while "safety management" competence was the lowest (4.00). Cronbach's alpha for all the competencies and the components was higher than 0.70. The value of the CVR for the competencies ranged from 0.50 to 0.90, while that for the components ranged from 0.70 to 1.00. This indicated that all the competencies and the components were appropriate to measure sports coaching competence, as the minimum value of CVR based on 20 participants needed to be 0.42 or higher. Table 5 shows the mean, the standard deviation, and the CVR for the sports coach competencies and the components [41].

Table 5. Results of modified Delphi for coaching competencies and the components.

Sports Coach Competence	Mean/Standard Deviation	Content Validity Ratio	Components	Mean/Standard Deviation	Content Validity Ratio
Sports performance competence	4.55/0.65	0.80	Sport-specific skill performance	4.45/0.76	0.70
			Fundamental fitness	4.60/0.50	1.00
			Sport-specific fitness	4.35/0.81	0.80
Sports knowledge competence	4.60/0.60	0.90	Sport-specific science knowledge	4.50/0.65	0.80
			Sport-specific humanities knowledge	4.35/0.75	0.70
			Sport-specific coaching knowledge	4.45/0.69	0.80
Pedagogical competence	4.35/0.81	0.80	Pedagogical communication	4.15/0.81	0.50
			Demonstration	4.45/0.76	0.70
			Observation	4.45/0.76	0.70
			Understanding of participant and coaching contexts	4.45/0.76	0.70
Operational and managerial competence	4.50/0.76	0.90	Club management	4.60/0.60	0.90
			Member management	4.65/0.59	0.90
			Public relations and marketing	4.65/0.59	0.80
			Facilities and equipment management	4.40/0.68	0.90
Philosophical and ethical competence	4.50/0.76	0.70	Member-centered philosophy	4.35/0.67	0.80
			Coaching enthusiasm	4.35/0.75	0.70
			Coaching ethics	4.30/0.73	0.70
Relationship management competence	4.45/0.69	0.80	General communication and counseling	4.45/0.60	0.90
			Self-management and development	4.35/0.75	0.70
			Empathy and understanding	4.45/0.60	0.90
Safety management competence	4.00/0.73	0.50	Safe setting management	4.45/0.76	0.70
			First aid	4.30/0.66	0.80
			Self and participant's sense of safety	4.65/0.59	0.90

3.3. Hierarchical Order of Sports Coach Competencies

Table 6 presents the results of the AHP survey to determine the hierarchical order of the sports coach competencies.

Table 6. The hierarchical order of sports coach competencies.

Sports Coach Competence	Number of Components	Weight	Consistency Index and Consistency Ratio
Sports performance competence	3	0.167	All the sports coach competencies had a consistency index < 0.100 and a consistency ratio < 0.100.
Sports knowledge competence	3	0.226	
Pedagogical competence	4	0.329	
Operational and managerial competence	4	0.057	
Philosophical and ethical competence	3	0.098	
Relationship management competence	3	0.058	
Safety management competence	3	0.065	

The "pedagogical" competence ranked the highest with a weight of 0.329, while "operational and managerial" competence was placed at the bottom with a value of 0.057. "Sports knowledge" competence (0.229) and "sports performance" competence (0.167) ranked second and third, respectively. "Relationship management" competence (0.058) and "safety management" competence (0.065) ranked slightly higher than "operational and managerial" competence at the bottom of the order. "Philosophical and ethical" competence (0.098) fell in the middle. In sum, the first, second, and third competencies in the order comprised two-thirds (0.725) of the whole weight (1.000), while the remaining four competencies comprised only 0.275 of the whole weight. Looking at the reliability of our results, the CI and the CR were lower than 0.1, indicating that the answers were sufficient to identify the hierarchical order of the competencies.

3.4. Hierarchical Order of Components

We also calculated the hierarchical order of each component within a particular sports coach's competence, as well as that of all the components. We called these the "local weight" (LW) and the "global weight" (GW), respectively. The GW of "pedagogical communication" ranked highest with a value of 0.136, while "facilities and equipment management" ranked lowest with a GW of 0.008. In general, the components under "pedagogical" competence had relatively high GW values, while the GW values of the components under "operational and managerial" and "relationship management" were lower. All the values of CI and CR for all the components were <0.100, indicating that all the hierarchical values were reliable. Table 7 shows detailed information on the hierarchical order of the components.

Table 7. Weight and rank of the components.

Sports Coach Competence (Weight)	Components	Weight		The Rank of the Global Weight	Consistency Index and Consistency Ratio
		Local	Global		
Sports performance competence (0.167)	Sport-specific skill performance	0.517	0.086	3	All of the sports coach competencies had a consistency index < 0.100 and a consistency ratio < 0.100.
	Fundamental fitness	0.211	0.035	11	
	Sport-specific fitness	0.272	0.045	9	
Sports knowledge competence (0.226)	Sport-specific science knowledge	0.265	0.060	5	
	Sport-specific humanities knowledge	0.245	0.055	7	
	Sport-specific coaching knowledge	0.490	0.111	2	
Pedagogical competence (0.329)	Pedagogical communication	0.414	0.136	1	
	Demonstration	0.182	0.060	6	
	Observation	0.161	0.053	8	
	Understanding of participant and coaching contexts	0.243	0.080	4	

Table 7. *Cont.*

Sports Coach Competence (Weight)	Components	Weight		The Rank of the Global Weight	Consistency Index and Consistency Ratio
		Local	Global		
Operational and managerial competence (0.057)	Club management	0.367	0.021	17	
	Member management	0.353	0.020	18	
	Public relations and marketing	0.142	0.008	22	
	Facilities and equipment management	0.138	0.008	23	
Philosophical and ethics competence (0.098)	Member-centered philosophy	0.393	0.039	10	
	Coaching enthusiasm	0.332	0.033	12	
	Coaching ethics	0.275	0.027	14	
Relationship management competence (0.058)	General communication and counseling	0.489	0.028	13	
	Self-management and development	0.256	0.016	20	
	Empathy and understanding	0.255	0.016	21	
Safety management competence (0.065)	Safe setting management	0.275	0.018	19	
	First aid	0.327	0.021	16	
	Self and member's sense of safety	0.398	0.026	15	

4. Discussion

The purpose of our study was to identify and confirm which competencies are most significant for sports coaches in Korea today and in the future. We believe that our analysis is timely as Korea evolves its society at the onset of the fourth industrial revolution. Reviewing sports coaches' competencies and aligning them with evolving societal needs is essential to attaining sustainable occupational capabilities [46–48]. Competencies must be continuously updated to remain consistent with the changing demands of our society. In contemporary society, sports coaching extends beyond teaching skills and improving physical fitness; it also involves shaping attitudes and behaviors. This implies that a sports coach needs to develop diverse competencies, encompassing sports performance, knowledge, relationship management, communication, ethics, and more, as highlighted in this study. In addition, it is imperative to implement compatible policies and systems that reflect these updated competencies not only on the field but also in venues, locker rooms, and accommodations [49–51]. We also explored the hierarchical order of the competencies and their components to classify their relative importance for success. Specifically, understanding this hierarchy provides insights and can inspire strategies for developing appropriate pre-service and in-service sports coach training programs [52,53] as well as contemporary certification tests. We were able to confirm that the competencies and the components that we examined were all necessary for Korean sports coaching success. Notably, the participants in the AHP singled out "pedagogical" competence as the most important. The weight of it (0.329) outranked the other competencies in the list. "Sports knowledge" ranked second with a weight of 0.226. These results imply that pre-service and in-service sports coach training programs in Korea should be focused on comprehensive and in-depth information on how to communicate with the sport's participants and how to establish the right environment for such training and learning, as well as what to look for, what to demonstrate, and what to consider in coaching to help the sport's participants achieve their goals [54–57]. When considering the relationship between participants' attitudes and behaviors in various teaching–learning settings, it is worth noting that their emotional changes may have a more significant impact on their behavior than their cognitive acquisition [58–60]. This suggests that both pre- and in-service sports coaching programs should emphasize pedagogical content, including communication skills.

The "operational and managerial" (0.057), "relationship management" (0.058), and "safety management" (0.065) competencies fell at the bottom—the fifth, sixth, and seventh positions, respectively—in the hierarchical order. This may be because the management

of clients, facilities, equipment, and safety is not perceived as the responsibility of the sports coach only. Rather, these competencies are likely the responsibility of many other employees as well. However, pre-service and in-service sports coach training programs need to include these three competencies to emphasize the sports coach's occupational accountability, given that, in reality, the coach has to share such managerial responsibility with others. Operational and managerial competencies should be considered in conjunction with safety management competence, as the former is closely interrelated with the latter. These competencies remain important as they are closely associated with people's spontaneous, active, and consistent participation in sports as well as their performance achievement [61–63].

Four components of "pedagogical" competence (0.329) and three components of "sports knowledge" competence (0.226) had relatively higher GWs than those under other competencies. Notably, the "sport-specific coaching knowledge" (0.111) component under the "sports knowledge" competence (0.226) had the second highest GW, and the "sport-specific skill performance" (0.086) component under "sports performance competence" (0.167) ranked third in the GW order. Both of these ranked higher than each GW of the three components under the "pedagogical knowledge" competence (0.329). The implication is that these two components represent a sports coach's own unique expertise and are what he/she should be able to do and know better than others [64,65].

The "empathy and understanding" (0.016) component under the "relationship management" competence (0.058) ranked at the bottom of the GW order. The implication of this could be either that the experts considered the term too broad or difficult to grasp or because they thought this component needed to be fostered through years of one's own experience rather than a short period of training or education. Sports coaches could increase their empathy and understanding if they were given opportunities to share various sports coaches' diverse experiences in the pre-service and in-service training programs [66,67]. However, this component should not be ignored, given that the relationship with participants without empathetic communication could not affect their behavior.

Surprisingly, "safe setting management" (0.018) under the "safety management" competence (0.065) ranked third from the bottom in the GW hierarchy. However, physically safe setting management remains important. As such, it needs to be included in both pre-service and in-service sports coach training programs [68–70], given that any kind of injury at any time often results in the individual discontinuing or even abandoning participation [69,71]. Moreover, the pre-service and in-service training programs need to help sports coaches pay attention to ensuring a psychologically safe environment (i.e., harassment-free, empathetic, and a mutually understandable and considerate atmosphere) [66,72,73] since it obviously influences the individual's motivation for spontaneous, active, and consistent participation.

In general, the experts surveyed put more weight on how to teach and coach than on how to manage clients, facilities, equipment, and safety. This is understandable, as coaching effectively is their major occupational accountability. However, having these abilities becomes useless without client enrollment and spontaneous, active, and consistent participation. Therefore, information relating to how to manage clients, facilities, equipment, and safety, as well as how to teach and coach, need to be included in the pre-service and in-service sports coach training programs and the sports coaching certification tests.

5. Limitations and Suggestions

Some limitations of our study warrant comment. First, we included coaches of a wide range of sports (i.e., archery, badminton, baseball, basketball, soccer, swimming, table tennis, taekwondo, tennis, and volleyball). This means that there could be discrepancies in the survey answers because the coaches could coach more than one sport or a team sport. Thus, our results do not reflect each sport's characteristics. Second, we did not consider the demographics of the coaches (e.g., sex, community, etc.). Thus, future studies on sports coach competency could consider what sport each person coaches, who the participants are, where the coaching is being performed, and the participant demographics. Such further

detailed information could inform the customization of future pre-service and in-service sports coach training programs according to the kind of sport as well as the other contexts.

6. Conclusions

The results of this study highlight seven competencies that contemporary sports coaches in Korean society should possess: pedagogical knowledge and performance, sports knowledge competence, sports performance competence, philosophical and ethical competence, relationship management competence, operational and managerial competence, and safety management. These findings suggest the importance of reinforcing pedagogical knowledge related to coaching and sports knowledge domains such as sports biomechanics, sports physiology, and sports nutrition in both pre- and in-service training programs, as well as in certification tests. In addition, the results demonstrate that contemporary and future sports coaches must actively engage in in-service training programs to remain aligned with evolving societal changes.

We believe that the results of our study have practical relevance. First, the results can be used by sports coaches in considering their own competencies and the areas they need to improve on to be more effective. Second, although ranked lower in the hierarchy of importance by the coaches, our results demonstrate that knowing how to manage clients, facilities, equipment, and safety, as well as how to coach and teach, remain priorities that should be included in the pre-service and in-service sports coach training programs and the certification tests. Coaching is often called an art [74,75]. For the sake of every individual club member's achievement and his/her team's success, an ideal sports coach should have in-depth and comprehensive knowledge, diverse and profound experience, an empathetic and considerate mind, and passion with insights. Our results can serve as a guide on how to be an ideal sports coach, and the competencies and components confirmed in the Delphi analysis and the AHP order can serve as a reference for both pre- and in-service sports coach training program developers and certification test managers. Ultimately, the competencies and components needed will depend on the individual sports coach and the community. However, we confirmed that the competencies and the components we analyzed in our study represent key indicators of current and future success in Korea.

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Abbreviations

AHP	Analytic Hierarchy Process
CI	Consistency Index
CR	Consistency Ratio
CVR	Content Validity Ratio
GW	Global Weight
LW	Local Weight
UK	United Kingdom

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