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Editor's Note

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As the whole world is buckling under a great wave of the COVID-19 pandemic, the concept of "Zero Distance Innovation" influences people's everyday life and their consumption behaviors. Under the impact of COVID-19 pandemic, many different sports area studies have also changed. In particular, we have seen an increase in the collaboration and competition among various sport fields and technology enterprises. The Artificial Intelligence technology and innovative virtual applications provide both game watching and home exercising with more possibilities.

As health has become the key issue during the recent COVID-19 pandemic, both academics and practitioners find it increasingly important to understand how to promote new marketing strategies, implement new business models, and incorporate new cutting-edge technologies to mitigate the negative impact of the pandemic on the sport industry.

As the Asian leading discussion platform in the field of Sport for academics, practitioners and government officials, the Asian Sports Management Review welcomes paper submissions and article contributions from all experts. We hope to provide a platform that facilitates discussions on various topics in this field, including industry development, recent trends and research, challenges and difficulties and strategies and solutions. We thank you for submitting your work in advance, and also appreciate our knowledgeable reviewers. We hope all readers may benefit from each of our special issues and topics, and wish you all peace and health.

Sincerely yours,

Yu-Hui CHOU, Ph. D.

ASMR **Editor**

Professor/ National Taiwan Sport University (NTSU)

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Content

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Generating Business Ideas in Taekwondo Using the Novelty Potential Concept

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This study provides practitioners in the sports industry with ideas on creating new business opportunities by analyzing patent and non-patent data using the Novelty Potential concept, assessed by the Word2vec algorithm. Novelty potential refers to the idea that the more different two abstract concepts are, the more novel their combination would be. We particularly analyze trends of patents related to taekwondo and blockchain technology by using Cooperative Patent Classification codes and co-occurrence networks created from text mining to identify important keywords, which can then be used to provide recommendations to sports businesses. We use the Word2vec distributed word representation model to measure concept distance and the Continuous-Bag-of-Words model, which predicts the center word based on the surrounding words. This approach is relatively new, especially for the sports industry, to which it offers unique insights on the creation of new business ideas and strategies based on the proposed methods. After determining keywords and important logical relationships, we present a new business idea consisting of an advanced video content platform for martial arts practitioners using artificial intelligence, blockchain, and Internet of Things devices.

***Keywords*:** Taekwondo, Novelty Potential, Word2vec, Patent information, Blockchain

Introduction

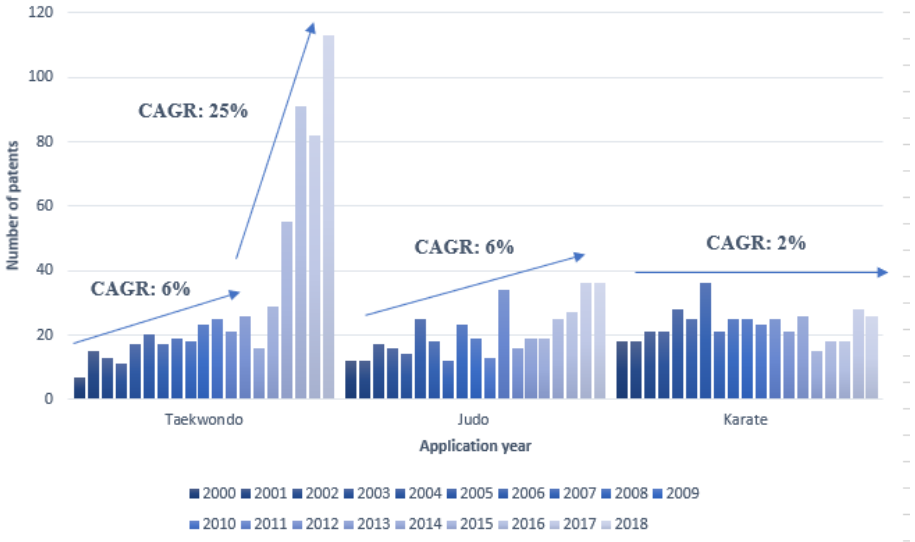
The sports industry consists of people, businesses, and organizations involved in any sports-related activities. By 2022, the global sports market is expected to increase at a compound annual growth rate (CAGR) of 5.9% to nearly $614.1 billion compared to $488.5 billion in 2018 (Business Research Company, 2019). Martial arts, such as taekwondo (TKD), judo, and karate, have also increased in popularity in the sports industry, especially among young people and adults, with around 3.6 million people practicing martial arts in the United States (Connor, 2019). The sports industry comprises three organizational sectors—profit, non-profit, and public—which provide similar services but differ in the way they obtain their revenue and operate their business.

Profit organizations (POs), including sports media, sporting goods manufacturers, retailers, and franchises, manage their business to generate income for themselves. Many of these sports organizations are associated with highly commercialized sports, such as baseball and basketball. However, martial arts mainly involve non-profit organizations (NPOs) with the sole purpose of addressing a social cause, a particular interest, and to meet their own needs. They generate revenue by providing goods and services to customers, being funded by the community, government subsidies, business sponsors, or private donors. In fact, these NPOs can be recognized as social enterprises (SEs; Fitzgerald and Shephard, 2018; Liu et al., 2015). However, we think NPOs face many challenges to survive in the market, such as lack of funding and an increase in

competition, especially with the ongoing COVID-19 pandemic. Therefore, they need to generate new streams of revenue, similar to POs, to sustain themselves in the market, by innovating and leveraging new technologies such as blockchain, Internet of Things (IoT), and artificial intelligence (AI). Innovation is a crucial part of firms' growth strategies (Christensen et al., 2016), and using blockchain—which is a decentralized, distributed ledger technology that facilitates recording transactions and tracking assets without any intermediaries—can help lower costs and secure data. However, not all NPOs and SEs have the requisite capabilities.

Among martial arts, we selected TKD as our case study because it is one of the most common martial arts, with 210 national member associations and more than 80 million participants (World Taekwondo Federation [WTF], 2016). Its addition to the Olympics is also indicative of its popularity (Park and Schein, 2006). We also investigated the application years for patents related to TKD in comparison to those of judo and karate during the period 2000–2018 by extracting details from the patent database. TKD is one of the most notable sports in martial arts and has the highest number of patents. It shows an upward trend and has a much higher CAGR when compared to judo and karate, whose trends have almost plateaued, as shown in Figure 1. TKD recorded the highest CAGRs, 6% and 25%, followed by judo (6%) and karate (2%). We observed TKD's sudden CAGR increase to 25% from 2015 to 2018, compared to 6% from 2000 to 2014. This is because of the approval of the WTF Council's five-year strategic plan between 2015 and 2020 for the development and expansion of the sport. The plan consisted of five main areas—competition, research, education, development, and partnerships—designed to provide a framework for the WTF to globally implement innovative programs and reforms for para-taekwondo (Anderson, 2014).

Figure 1 *Comparison of patent trends 2000–2018: taekwondo, judo, and karate. CAGR: compound annual growth rate*



Therefore, in this paper, we propose a new strategy to help SEs in martial arts, specifically TKD, to innovate their business using patent and non-patent information as well as the novelty potential concept. We also conducted interviews with representatives of small and medium-sized enterprises (SMEs) and large enterprises (LEs) among POs to gain insights on industry challenges. Currently, there are limited studies on the use of the proposed method to generate new ideas for TKD as an innovation strategy, therefore, this study helps fill an important gap.

Characteristics of the Sports Industry

As mentioned earlier, the sports industry consists of public organizations, NPOs, and POs. The public sector comprises national, state/provincial, regional, and local governments as well as special agencies that formulate sports policy, provide financing to other sectors, and support specialist duties, such as elite athlete development and drug control. The non-profit sector consists of community-based clubs, governing bodies, and international sport organizations that provide competition and participation opportunities, regulate and maintain sporting codes, and organize major championship events. POs make up the third sector, which includes professional leagues and their member teams, as well as commercial businesses, such as athletic apparel and equipment manufacturers, media corporations, stadium operators, and event coordinators.

To achieve sustainability in any sports organization, understanding the management process is highly important. There are two approaches in managing sports organizations. The first approach is to operate them as commercial enterprises in which the goal is solely to generate revenue. The second approach considers sports organizations to have unique features to which not all managerial practices used in the commercial sectors apply (Stewart and Smith, 1999). Some sports, such as martial arts, are built on community and social activities rather than commercial enterprises, which makes them more akin to NPOs. This market differs from the commercial sector, where business strategies are more crucial in identifying competitive positions.

Regarding the sports industry's uniqueness, four distinct characteristics can be identified that make it different from other industries (Smith and Stewart, 2010). First, sports are heterogeneous and entail fleeting experiences involving fans, who are passionate for sporting teams, athletes, and competitions. These fans celebrate the achievement, success, and performance results in a way that is unique from other social and economic activities. For example, the Tokyo 2020 Olympic Games allowed fans to witness and support each athlete's determination and competitive spirit. This emphasizes sports' power to connect people from diverse backgrounds through experiencing various emotions and passions, which suited the motto of the Olympic Games sought to represent, "united by emotion." The sports industry is also characterized by strong product and brand loyalty, meaning fans are unlikely to switch their support to other teams, which can be disadvantageous for some sporting organizations that want to increase market share and attract new fans or members. Sports fans also exhibit high degrees of optimism, believing that their team will win despite continuous losses, which can lead to vicarious identification, such as buying products that sports celebrities endorse.

Second, the sports industry focuses on winning over revenue. Commercial sectors emphasize generating revenue and increasing shareholders' wealth. By contrast, in professional sports clubs, the focus is on sports performance and results, such as ranking and wins. More wins translate to a better reputation for the sports organization.

Third, the sports industry has varying levels of quality, balanced competition, and anti-competitive behavior characteristics. Game outcomes in which one team dominates are usually unpredictable, reducing the attractiveness of the games or tournaments. Therefore, the variability of sports makes it difficult to guarantee quality in the marketplace relative to providers of other customers products. Sports teams must compete with rivals on the field while simultaneously cooperating off the field to benefit the industry as a whole (Syzmanski and Kuypers, 1999). Restrictions that prevent certain sports clubs and teams from gaining monopoly in the market can help increase revenue for all members of sports leagues and their competition. This differs from businesses in other industries, which aim to defeat all rivals and gain monopoly. Anti-competitive behavior has been utilized by professional sports to boost their commercial impact, protect their brands, and increase profit through collective marketing initiatives.

The fourth unique aspect of the sports industry is sports' limited availability. Sports clubs are limited by the number of scheduled games or season length. This differs from other industries, which can increase production to meet customers' demand in the market. Therefore, the capability

of sports clubs to maximize profit through tournaments tickets sales, for example, is limited.

Both sports and business have a common interest in value creation and branding, funding new profit streams, product innovation, and market expansion. However, the sports industry is more concerned with beating opponents, winning trophies, sharing revenue, and fostering the passion of both players (employees) and fans (customers; Foster et al., 2006). Athletes are currently considered business assets that attract fans, sponsors, and media exposure. Hence, unlike other businesses, sports players can earn much higher incomes than their superiors, the sports managers. Regarding martial arts, they differ from other businesses in terms of product and service offerings, target customers, fees, and sales promotion, among other aspects. For example, in TKD schools, membership fees are the main concern as these may affect current and future members' decision to participate in TKD clubs or schools (Sawyer and Smith, 1999). High member enrollment is important to offset the cost of location and sparring equipment and to generate revenue. TKD members will also consider other costs, such as tournament fees, belt test fees, training equipment, and additional related fees before joining a specific club. To attract more members, TKD schools need to offer new and unique products and services that differentiate them in the market.

Martial Arts and Taekwondo

Participation in martial arts, such as TKD, judo, karate, and kickboxing, has increased tremendously. In addition, IBISWorld reported a total profit of $5 billion in revenue in 2019, with 80,559 martial arts businesses in operation. It is expected that as economic conditions continue to improve, the demand for martial arts will also increase. However, the rise of martial arts is a result of not only demand among martial arts participants but also the continuous efforts of industry leaders (Ko, 2003). This demonstrates the growing importance of this sport in society. Overall, TKD contributes to participants' personal well-being through both physical fitness and mental activities (Anthony, 1991; Weiss, 1993). The uniqueness of TKD training lies in its focus on psychological change, such as spiritual discipline, reducing mental health disorders, self-defense ability, and leadership capabilities, which are different focus areas compared to other sports. With the rise in mental health issues across the world, martial arts such as TKD thus aid in the maintenance of mental balance, which has stirred consumer interest, attracted newcomers to the market, and led to a rise in market competition. However, to survive, traditional NPOs in TKD cannot rely solely on funding but should also generate other revenue and transform themselves into SEs.

Social Enterprises

SEs are NPOs that generate income using strategies that combine social and commercial activities to enhance the delivery of social values (Saifan, 2012) and also provide market-based solutions to solve social problems (Kerlin, 2013). Thus, SEs can be defined as NPOs that conduct activities similar to POs to deliver their social mission more effectively. Many factors are related to more NPOs transitioning to SEs—for example, reducing funding and increasing competition between POs and NPOs (Kerlin and Pollak, 2011). NPOs that offer similar sports activities as POs are more likely to face higher competition than NPOs that consider more unique programs (Rossi et al., 2020). NPOs must make plans to generate commercial revenue by introducing revenue-seeking business activities and developing a profit model for their existing social products and services. They must also find opportunities for business partnerships and collaboration with POs (Ko and Liu, 2020).Therefore, to sustain themselves in the industry, traditional NPOs must transform into SEs to generate revenue as POs do, by innovating their business model, introducing new products or services, and leveraging new technologies. Currently, owing to changing social and economic conditions due to COVID-19, people and businesses must adapt to a "new normal" that involves aspects such as working from home and social distancing. Therefore, predicting and

creating new business in this VUCA (volatility, uncertainty, complexity, and ambiguity) era is crucial for SEs to sustain their business, which can be done by using the method proposed in this paper.

Research Methodology

In this study, a mixed-methods design was used. We analyzed patent and non-patent data using the novelty potential concept for SEs to propose how to enhance innovation activities and create new business ideas. We also conducted semi-structured interviews with representatives of POs (SMEs and LEs in the sports industry) to gain insights into industry challenges. We then present the findings based on our methodological approaches. Patent analysis can provide helpful information for analyzing a technical area or an innovation mechanism. Patent records are a valuable data resource if the evidence is analyzed systematically, as in general, patent information reflects the state of the industry. Non-patent data include scientific papers and books, among others, which provide information from the latest research in specific areas. Both patent and non-patent data are essential to obtain the complete and actual picture of the TKD industry for the current study.

As part of the methodology, the novelty potential concept was used to discover new ideas using sports and blockchain patent data. Generating new design ideas in the conceptual design phase is a foundation for developing innovative products, and combining existing abstract concepts will result in the creation of new ones. Therefore, the idea of novelty potential was introduced to determine the potential of the two function concepts—sports and blockchain—the combination of which would lead to novel concepts based on their corresponding patent abstracts. It assumes that the more different two chosen concepts are, the more novel the subsequent combination would be (Nomaguchi, 2020). The combination is calculated with a distributional semantics method, known as Word2vec (Mikolov et al., 2013), and a neural network for processing corpus. With these proposed methods, we aim to help SEs increase their innovation activities and generate business ideas to increase revenue.

Data Investigation

Patent and Non-Patent Data Analysis

We collected patent data from the World Intellectual Patent Organization (WIPO) and other patent databases. We searched for keywords such as “taekwondo,” “blockchain,” and “baseball” in the Title OR Abstract OR Claims fields for the 2000–2018 period. Next, we extracted the requisite patent information, such as application year, Cooperative Patent Classification (CPC) code, and abstract. For non-patent information, we collected data from journals and articles from the SCOPUS (Elsevier) database. The keywords “blockchain” and “distributed ledger” were used in the journal search.

Next, we used co-occurrence network graphs to analyze and visualize the data from the patent and non-patent abstracts as well as CPC information, using the conventional text mining method. Specifically, the networks are graph-based, and natural language processing techniques, such as keyword extraction and word-sense discrimination were used to create them. Based on the analysis, we identified the relationships between words and then determined essential keywords. We also compared the number of documents between patent and non-patent sources to identify their trends, and conducted a statistical analysis to measure relationship strength.

Novelty Potential (Word2vec)

The flow of new idea creation based on novelty potential is shown in Figure 2. The first step is collecting patent data, followed by concept extraction, concept classification, and finally, the creation of new ideas based on novelty potential and the void matrix.

Patent Data Collection. The text of the abstracts of the patents related to the technical area to be analyzed was examined. Using the keywords “sports” and “blockchain,” we extracted

the patent abstracts from the database. To improve the classification accuracy of the concepts contained in the patent text, pre-processing was performed on the patent information.

Concept Classification. The hierarchical structure of the concepts in the abstracts was constructed using the following procedure.

Step 1. Normalizing the word vector, taking their average in one sentence, and using it as the sentence vector.

Step 2. Calculating the cosine distance between sentence vectors.

The distance between all sentence vectors and between each concept was assessed by measuring the cosine distance, as shown in Equation 1. Here, u and v represent the two sentence vectors, respectively. The cosine distance represents the similarity of the tendencies of the content of two sentences; the smaller the value, the shorter the distance, meaning that the two sentences tend to have similar content. We hypothesized that a group of abstract concepts close to each other corresponds to a higher-level abstract concept.

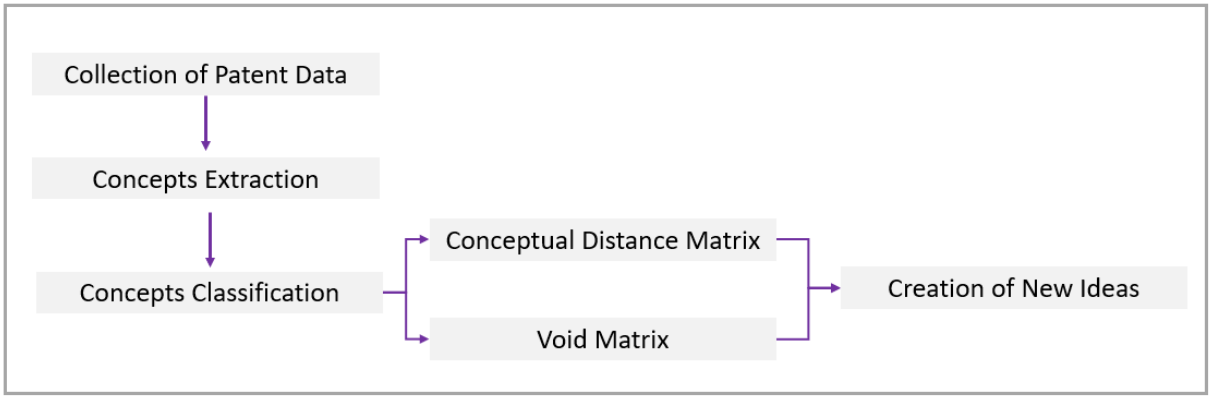
$$Cos\ distance = 1 - \frac{uv}{|u||v|} \qquad (1)$$

Creating Concept Novelty Potential and the Void Matrix. We measured the novelty potential between the abstract concepts set. The length between abstract concepts is the concept distance, which influences the novelty potential. We placed the values in a matrix with abstract concepts arranged vertically and horizontally. Next, we created a void matrix based on information such as the type of abstraction contained in each patent. For example, if the abstract concepts of patent A and patent B intersected with each other, we assumed that there was one patent that included both concepts A and B.

Generation of a New Design Concept. When combinations with long distances between concepts are selected, the novelty is high. Common cells with greater distance in the novelty potential matrix and void (0) cells in the void matrix can be new idea concepts for SEs. In the next section, we present the results of the analysis of patents, non-patents, and novelty potential.

Figure 2

Flowchart of analysis of data of patents related to blockchain and sports



Results

Patent Analysis Findings: Intellectual Property Trends

Regarding the patent analysis findings, we investigated the patent trends of TKD along with those of other sports, such as baseball and basketball, based on application year. Next, we identified the top blockchain technology trends based on the CPC codes.

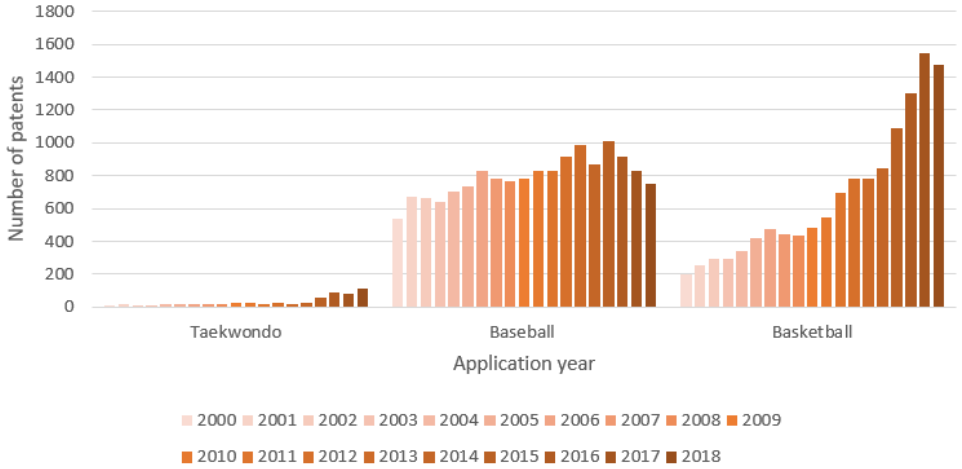
Sports Industry Comparison Using Patent Information

Figure 3 compares the number of patents concerning different sports from the application years 2000 through 2018 using the International Patent Documentation database. Basketball and baseball have a higher number of patents than TKD because of their popularity and higher number of players. These two sports are listed among the top 10 most popular sports (Sourav, 2021). They have an estimated 2.2 billion fans and 500 million players, compared to TKD, which has only 80 million practitioners (WTF, 2016). Basketball patents are increasing but not at a constant rate.

However, there is still an upward trend in TKD patents compared to baseball patents, which have almost reached a plateau. This indicates that baseball may have declined in popularity. Meanwhile, the number of TKD patents is relatively low compared to the other two sports but is expected to increase in the future. Patents are highly correlated with increased innovation, knowledge sharing, and economic growth. More fans or players could mean significant innovation in the area.

Figure 3

Comparison of patent trends during 2000–2018: taekwondo, baseball, and basketball



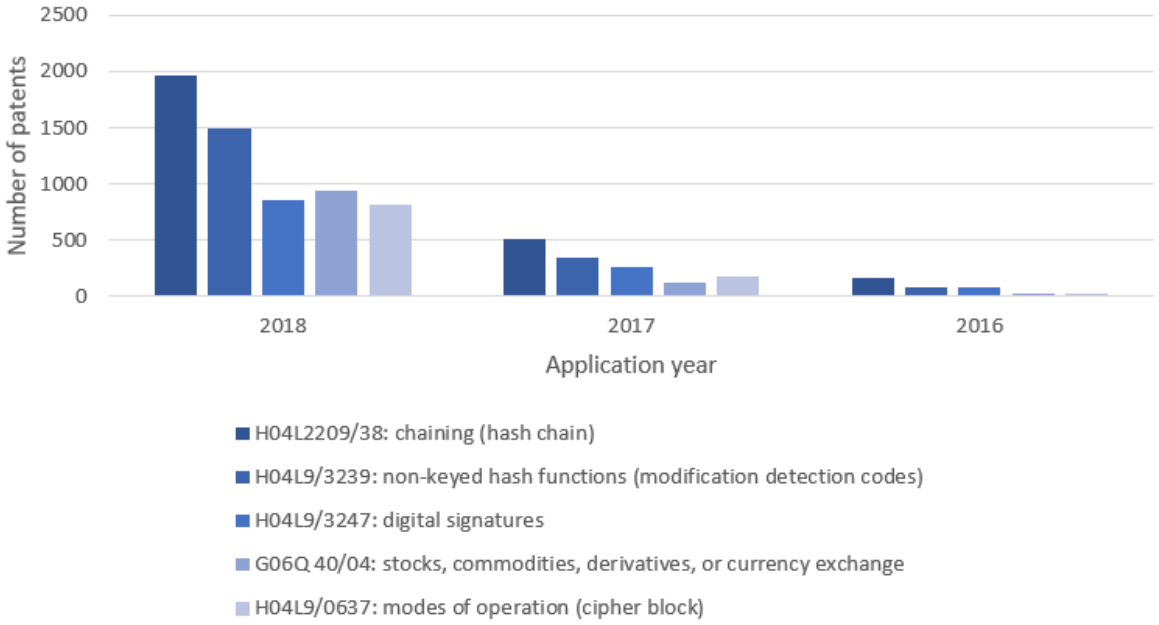
Cooperative Patent Classification Technology Trends: Blockchain

This section identifies the top CPC technology trends for blockchain, as shown in Figure 4. We collected the patents filed from 2015 to 2017 from the WIPO database for blockchain CPCs. Based on the results, all five blockchain CPCs showed increased use from 2015 to 2017. Next, we identified that the primary CPC for blockchain is H04L (transmission of digital information). Therefore, we recommend that a new combination be made with the CPC H04L2209/38 (chaining), which records the highest number of application numbers, and TKD CPCs in the A63B category (equipment for martial arts).

For example, the chaining technology can be used to securely store data from smart sporting TKD devices or equipment, such as headgear and body protectors.

Figure 4

Top five blockchain-related cooperative patent classifications from 2016 to 2018 showing the latest development of the technology in recent years



This combination can be optimized for the IoT ecosystem because it provides zero transaction fees and a unique verification process. This will be helpful to SEs in reducing costs and time. By observing the CPC trends, SEs can identify the increase and decrease in CPCs and choose which technology they want to leverage. The next section discusses the creation of the co-occurrence network for TKD.

Co-occurrence Network: Taekwondo in Text Mining

Next, we used a co-occurrence network graph to identify the potential relationships between TKD CPC codes, as shown in Figure 5. We identified and decided on two different clusters in TKD CPCs as an example of the co-occurrence network result. Cluster I indicates the majority of CPCs in TKD, while Cluster II indicates the minority of CPCs. Both clusters have the potential to be developed into new business areas. In Cluster I, we identified the A63B category (apparatus for physical training), which constitutes most CPCs for TKD. This CPC has a slight connection with other categories, such as G09B (educational or demonstration appliances and appliances for teaching) and A4D1 (outerwear, protective garments, and accessories).

However, in Cluster II, G06Q50/205 (systems or methods specially adapted for specific business sectors) and G06Q20/12 (payment architectures) still represent minority categories for TKD. This shows a high potential for new technology and CPC combinations to be developed in this area. For example, we can combine G06Q20/12 (payment) with H04L2209/38 (chaining) for TKD.

Non-Patent Analysis Findings

In our non-patent analysis, we downloaded abstracts from journals and articles from SCOPUS (Elsevier) database. First, we identified the trends between the patent and non-patent analysis by conducting comparisons between them. Next, we analyzed the data by performing text mining of the co-occurrence network analysis.

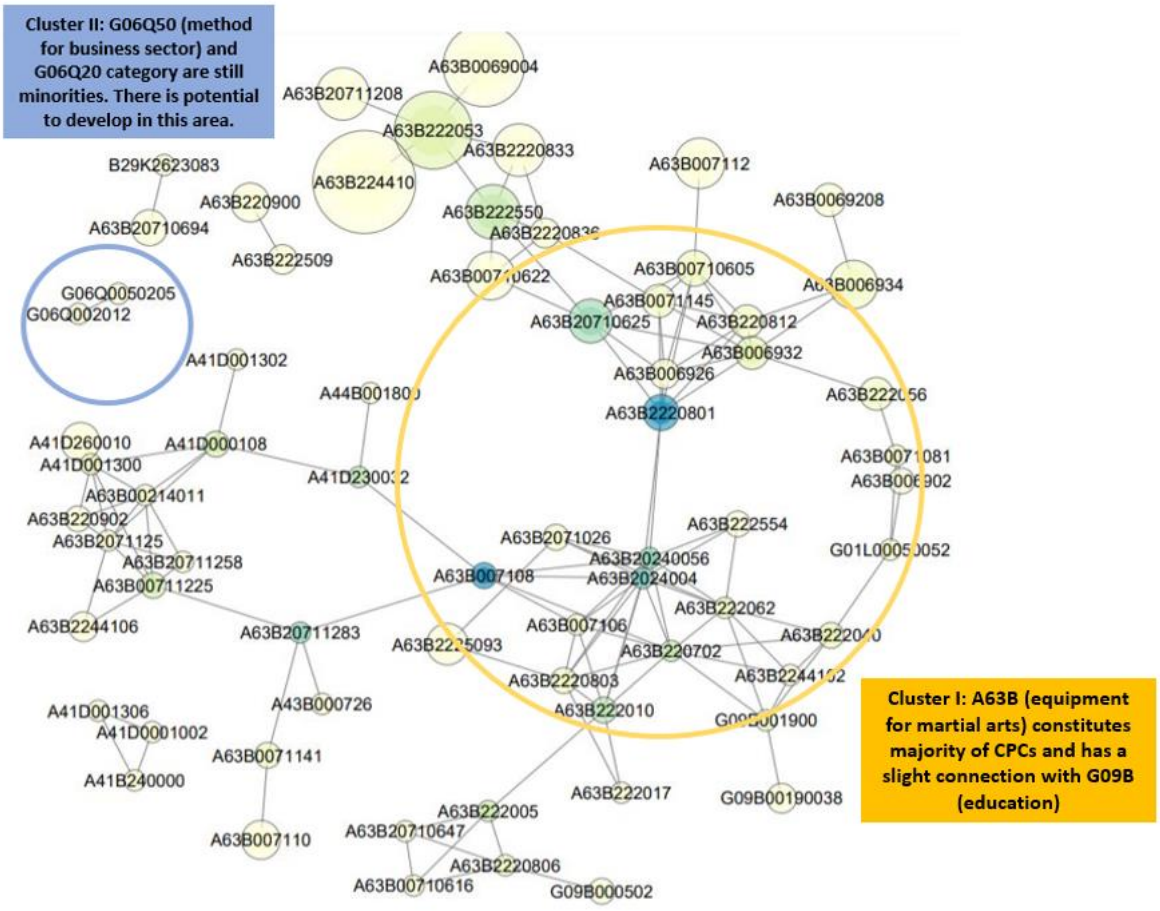
Patent vs. Non-Patent Results

We compared blockchain-related patent vs. non-patent results and calculated the coefficient of determination (R^2) to assess the strength of the linear relationship between two variables. The number of both patent and non-patent-related documents increased from 2014 to 2018. For blockchain-related patents and non-patents, the R^2 value was 0.92, which indicates an

extremely strong positive relationship. This implies that blockchain technology is business-oriented because the number of patents increases with the increase in the number of journal articles. This situation differs for AI, wherein journal articles are published first, followed by patents. Next, we used co-occurrence network analysis on blockchain- and TKD-related non-patent data.

Figure 5

Potential relationships between taekwondo's Cooperative Patent Classification (CPC) codes.



Text Mining of the Co-Occurrence Network Analysis

We conducted co-occurrence analysis with the non-patent data to demonstrate the centrality (significance) of the particular node (concept or word). First, we analyzed the co-occurrence network by extracting the words in the abstracts concerning blockchains and identifying the potential relationships. An example of a word-for-word co-occurrence network analysis is shown in Figure 6. In example 1, we observed that the word "technology" has high centrality with words such as "chain" and "system." In example 2, the word "Internet of Things" is closely related to the word "secure." Therefore, SEs can make IoT devices highly secure by combining them with blockchain technology to send data and share transactions with tamper-resistant records.

Next, we used co-occurrence network analysis for martial arts and TKD, as shown in Figure 7. In example 1, the word "athlete" has high centrality with the words "performance," "taekwondo," and "training." Meanwhile, in example 2, we observed that the words "sports," "combat," and "athletes" are closely related to the words "rapid" and "weight loss." This shows that combat sports have a high relationship to achieving rapid weight loss. This word-for-word co-occurrence network can help SEs identify technology-related keywords and determine which words are closely related.

Figure 6

The blockchain co-occurrence network (2000–2020) identifies two clusters with important keywords such as "chain," "Internet of Things," and "secure."

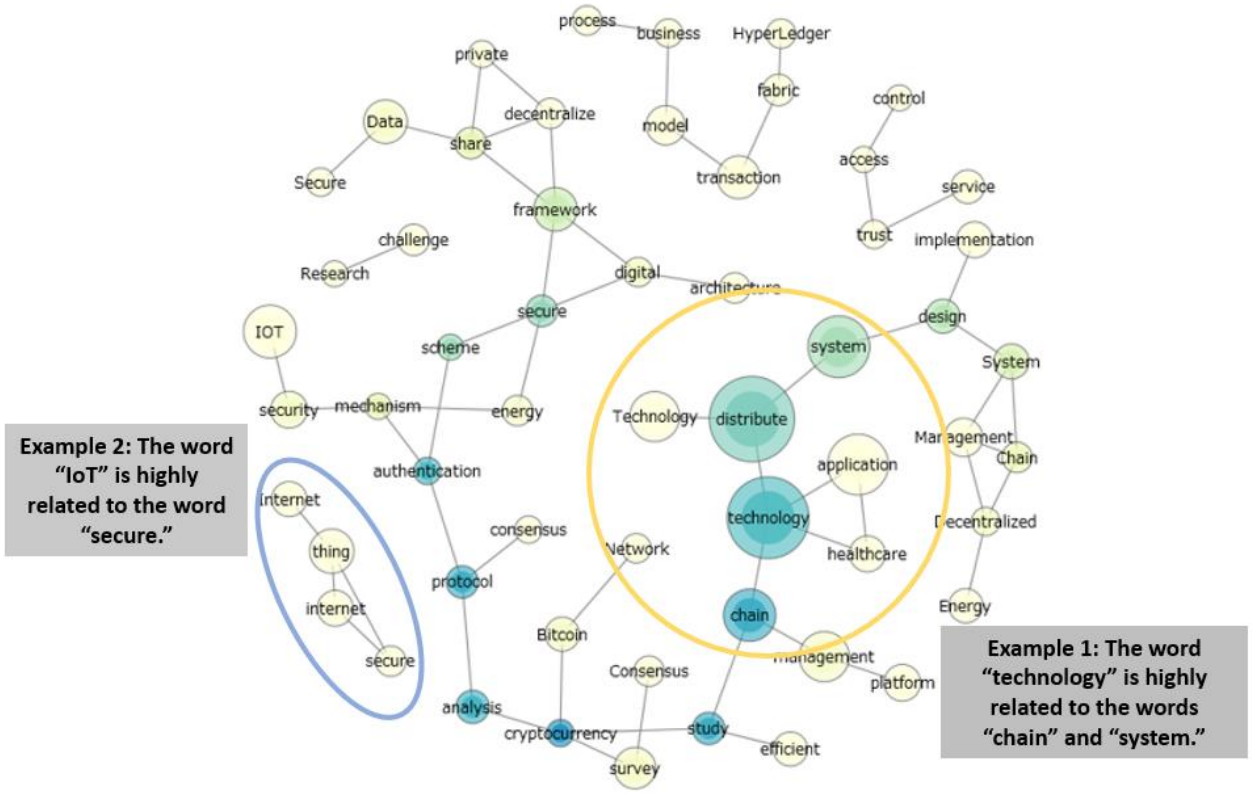
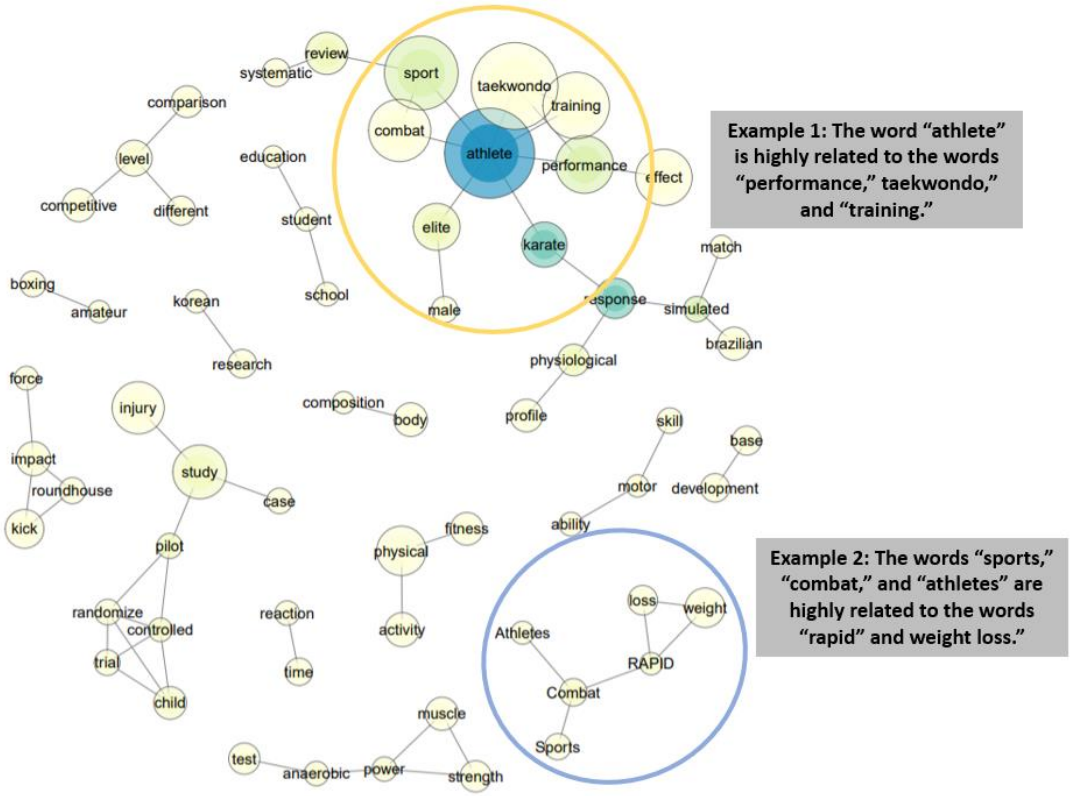


Figure 7

The martial arts and TKD co-occurrence network (2006–2020) identifies two clusters with important keywords, such as "performance," "training," and "weight loss."



Usage of the Novelty Potential (Word2vec) Concept

We used the novelty potential concept to formulate new ideas using sports and blockchain patent data. This method uses the Word2vec model.

Results of Layering Abstract Concepts and Setting the Degree of Abstraction

A dendrogram was drawn using the distance information between the concepts found in the abstracts. The horizontal axis represents the number of sentences, and the vertical axis is the distance between concepts obtained by measuring the cosine distance. Regarding the thresholds involved in the classification of concepts, 0.85 was determined as the threshold after several rounds of trial and error. The difficulty of verbalizing abstract concepts that collectively refer to the sentences contained in the cluster and the number of classifications of concepts was considered. We were able to extract 16 abstract concepts. It was difficult to form some abstract concepts independently (Concept 3, for example), and some abstract concepts included multiple technologies at the classification stage, such as Concept 7.

Next, we created two matrices, novelty potential and void. The novelty potential matrix measured the distance of cosine similarity. The higher the number, the further the distance; therefore, the higher the novelty potential. Meanwhile, the void matrix showed the count of patent numbers between the groups. Void indicates no similar patents; therefore, the combination of groups with the most voids can be new (Nomaguchi et al., 2020). Afterward, using Equation 2,

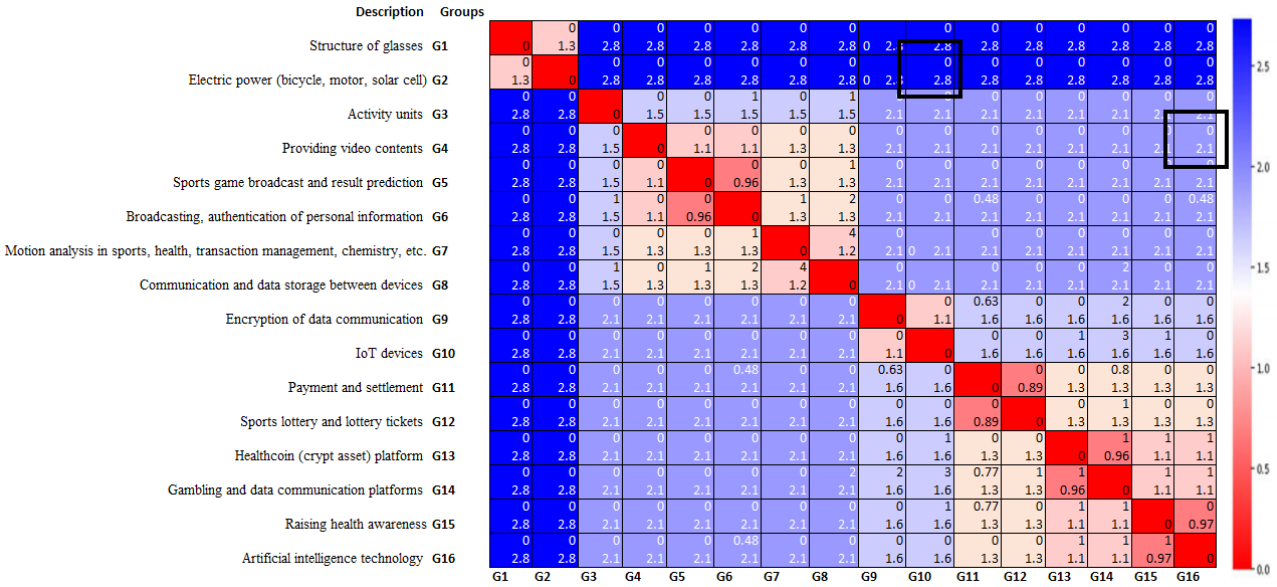
$$\eta = \frac{Void}{Novelty\ Potential}, \qquad (2)$$

we created a new matrix, as shown in Figure 8. The upper number represents the η value, and the lower number, the novelty potential value. We found the minimum value of this number from the matrix. For $\eta = 0$, we weighed the novelty potential value and clarified the rationale by quantifying its importance.

The horizontal and vertical matrix presented 16 groups with different concepts. We identified two sets of groups that form new combinations for SEs. The sets are Groups 4 and 16 (providing video content and broadcasting based on AI) and Groups 2 and 10 (using solar cells for IoT devices).

Figure 8

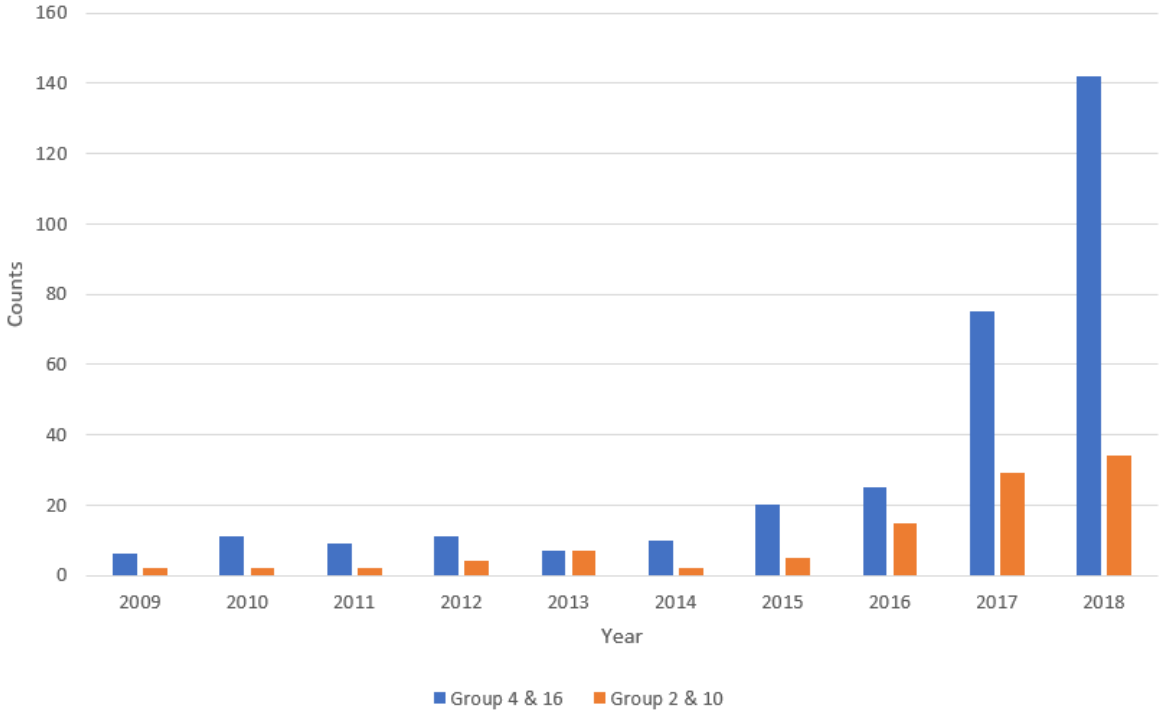
The new abstract matrix



To verify the novelty of these groups, we searched the patent database using "IoT," "solar cell," "AI," and "video content" as keywords. Figure 9 shows the patent application trends of Groups 4 and 16 (AI and video content), which went upward in recent years. This shows that AI is becoming a powerful tool for businesses for creating advanced video content. Regarding Groups 2 and 10, we investigated the patent trend and identified that this combination caused the trend to rise from 2016 to 2018.

Figure 9

Upward patent application trends in Groups 4 and 16 and Groups 2 and 10 (2009–2018)



In the future, billions of IoT devices, self-powered by indoor solar cells, may provide everything from environmental information to human-to-machine and machine-to-machine communications. This could help reduce energy consumption and battery waste. Therefore, these two combinations will help SEs achieve product and service differentiation against their competitors in the market. Based on our research results, we created a new business idea for the SEs in the sports industry in the discussion section.

Interview Results

Semi-structured interviews

So far, our paper mainly focused on SEs. However, in this section, we focus on POs, consisting of SMEs and LEs, in the sports industry. Interviews were conducted with representatives from an SME (TOKAIDO, top-notch karate clothes, belts, and supplies) and LE (Mizuno, a well-known general sports-related manufacturer) to gain insights on current business and industry challenges, views, and perspectives. We provided a list of questions on specific topics, which the respondents could answer freely. The interview was considered the private opinion of the person interviewed, not a corporate opinion. Finally, certain recommendations for the SEs were made.

Business Model and Challenges in Small- to Medium-Sized Enterprises and Large Enterprises

Table 1 compares SMEs and LEs in the sports industry based on their business model, challenges, and future innovation plans. We observed that LEs find innovating the business model essential for long-term sustainability and competition. Conversely, SMEs

were more complacent and reluctant to change, despite many challenges and reduced sales profits. This could affect long-term performance. It becomes critical for companies to innovate their business models because new ideas might emerge that could provide unique products and services. For example, emerging competitors such as Uniqlo, a fashion brand that offers sportswear products such as AIRism, are growing in popularity. If this trend continues, Uniqlo could become a threat to many sportswear companies.

Table 1

Comparison between small-to medium-sized enterprises (SMEs) and large enterprises (LEs)

	SMEs	LEs
Business Model	**Satisfied** -To continue using the current business model for more than 10 years. -Martial arts industry has name recognition, and industry competition, such as karate, is not inconsequential. -Currently, they are satisfied with their sales, such as in manufacturing and selling popular items for karate.	**Not satisfied** -Business model is not robust in domestic and international markets, especially in China. -Example of issues are communication problems between top management and the rapid growth of China's domestic industry. Therefore, the amount of goods exported has become unstable.
Future Plans	-Might innovate business model, depending on the environment and needs. -Sales decreased by 10% compared to last year due to COVID-19, when many schools and dojos were forced to close, thus losing some revenue. -Plans to focus on services for customer satisfaction such as nationwide trial fitting service for high schools and increased web-sales strategy.	-Plans to innovate business model within 6–10 years. -Plans to expand to other countries such as Vietnam, Thailand, and Indonesia instead of China. -Plans to focus on new products for older people and to create high-technology sporting goods.
Challenges	**-Technology**—still relying on offline rather than online sales. **-Intellectual property**—many patents related to manufacturing methods; therefore, related factories are asked to take measures to avoid them. **-R&D** **-Organizational reform**	**Technology, R&D, and fabrication** -Currently, there are no fabrication plants in Japan, thus, products must be outsourced to other countries, such as Thailand and Indonesia. However, the main issue is how to maintain high product quality when outsourcing to other countries. **Human resource** -Lack of training for management and poor cultivation of human resources because it is a family company. -By contrast, companies that are not family-owned, such as Asics, have a better training system.

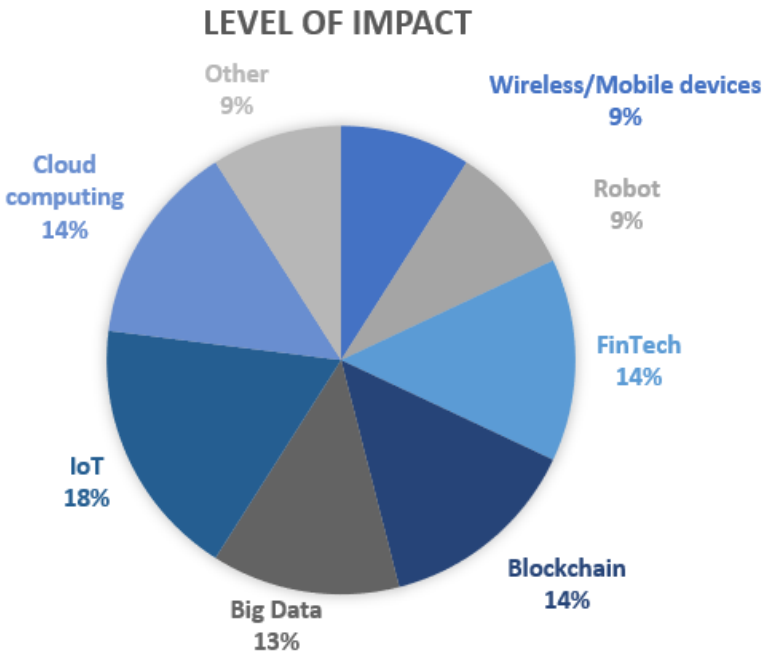
Potential Applications to Drive Company Profit

We also identified potential applications to drive company profit, as shown in Figure 10. For LEs, the top application is IoT, followed by blockchain, fintech, cloud computing, and big data. The others are ranked at less than 10% of the level of impact. These categories are wireless/mobile devices, robots, and other technology. In the sports industry, human resources are more critical than robots. However, from a manufacturing perspective, robots are essential. For SMEs, the main application is big data, which is used to understand customer needs. The

combination of these applications is crucial for SEs to achieve total optimization. An example is combining blockchain with big data or IoT. Leveraging these applications will help boost martial arts industry growth in the future.

Figure 10

Percentage levels of applications in driving a company's profit



Discussion and Recommendations for Social Enterprises

Based on interview data, we found that LEs have a higher-level awareness of the need to face future challenges compared to SMEs. LEs find that innovating the business model is essential for the business to survive in the long run. Innovation is much easier for LEs, as they have more resources and capabilities than SMEs. By contrast, SMEs are more reluctant to change and innovate, possibly due to the lack of capital and resources to invest in the latest technologies. In addition, they do not have the relevant expertise and skills. This could affect long-term performance and reduce their market share as new competitors enter the market to provide better products and services, such as Uniqlo. As competition intensifies between SMEs and LEs in POs, it is essential for SEs to develop their own strategies to sustain and compete in the market, especially during the COVID-19 era. Therefore, we identified strategies for SEs based on the challenges discussed:

1. ***Technology:*** Investing in or integrate technologies such as private blockchains with IoT_and big data to secure transactions, lower transaction costs, and connect with technology partners.

2. ***Intellectual property (IP):*** Hiring IP experts to manage IP and IP licensing and partnerships.

3. ***Organization:*** Creating an open innovation ecosystem, such as seekers (companies) and solvers (experts).

4. ***Branding and marketing:***

a. Collaborating and forming partnerships with athletes or celebrities for product endorsements that customers will perceive to have value based on association and brand recognition;

b. Strategically collaborating with POs (SMEs or LEs), which include schools, dojos, universities, companies; and

c. Developing a strong brand that is closely connected with the company's mission statement.

5. ***Human resources:***

a. Cultivating a learning environment and educating employees on digital transformation; and

b. Hiring experts in R&D and technology, such as data scientists.

Suggestions on Potential Use of Blockchain in Taekwondo Social Enterprises

Using Blockchain in the Taekwondo Scoring System

To ensure fairness in TKD judging, especially in competition scoring, a wireless scoring system for the players that leaves no room for dispute, needs to be put in place. For example, scoring system software such as iPS Host, developed by iCROSS, should be combined with blockchain technology from Scalar DLT. It is a tamper-resistant distributed ledger using a method called decoupled consensus, in which the contract execution phase and the tampering verification phase are separated (decoupled).

Combining Blockchain and the Internet of Things for Smart Sporting Devices and Equipment

TKD smart sporting equipment, such as helmet sensors, provides immediate transmission to an app that keeps track of hit counts and force impacts. It is possible to know when a player has experienced a hit that may have resulted in a concussion; therefore, the match can be stopped, and the player can be examined. Moreover, data retrieved from the sensors are stored in the blockchain, which provides traceability and transparency. Autonomous decentralized peer-to-peer telemetry (ADEPT) is a blockchain technology that serves as a ledger of life for devices that would autonomously broadcast transactions between peers in a three-tier structure of peer devices and architecture (Higgins, 2015).

The ADEPT concept uses blockchains as the system's foundation, securing transactions with a combination of proof-of-work and proof-of-stake. BitTorrent (file sharing), Ethereum (smart contracts), and Tele Hash were chosen by IBM and Samsung (peer-to-peer messaging). Using the Bitcoin protocol, ADEPT can be used to connect many devices at a low cost (Higgins, 2015). SEs can benefit from the integration of blockchain technology with smart devices to make all transactions secure and offer scalability.

Combining Blockchain, Internet of Things Devices, and Artificial Intelligence for an Advanced Video Platform

Blockchain can create a credible and immutable record of biometric data while AI can analyze and generate insights from this data. By combining these technologies, a new health application platform can be created for martial arts players with strong support from the Microsoft Azure platform combined with AI.

Based on the novelty potential results, we created an advanced video platform based on blockchain, AI, and IoT devices for the martial arts community, which includes martial arts students and trainers. Owing to the COVID-19 pandemic, many businesses are forced to adapt to a "new normal" involving working from home and social distancing. Therefore, it is crucial to adopt a new business model for martial arts to fit the current situation. The business plan using blockchain technology from Scalar DLT can provide a secure content platform to share data from IoT devices anywhere and anytime. Some of the value propositions from this business plan include:

- Blockchain-based platform: decentralized data, secure and transparent accessible to all martial arts' members;
- IoT devices and solar cells: reduced battery consumption and cost-savings;
- Secure data storage from smart sporting martial arts devices;
- IoT sensors and AI to provide a personalized experience;
- Analysis of the martial arts players' training performance, frequency of training and fitness levels, as well as provision of specialized video and training plans; and
- Sustainable development goals: using solar cells to reduce energy consumption.

Conclusions

We proposed a new strategy for TKD SEs to generate business ideas using patent and non-patent information and the novelty potential concept. These methods can help SEs in the sports industry understand current patent trends and capture key technologies using CPC codes. We also developed logical ideas using the novelty potential concept to create an example business idea for an advanced video content platform for martial arts practitioners using AI, blockchain, and smart sports IoT devices. This platform could be used by SMEs, such as TOKAIDO, to increase revenue by providing unique products and services of much higher quality. Because of the pandemic, they were forced to close their dojos, which affected their income; however, by implementing this new video content platform, students and members can stay connected and attend training virtually.

However, different sports-industry SEs have different goals, depending on their mission statement. This study only analyzed TKD- and blockchain-related patent trends based on CPC codes and patent application years. For future studies, other technologies and sectors should be analyzed, depending on the organization's goals. In conclusion, owing to the ongoing COVID-19 crisis, it is becoming more apparent that innovation is required in business models, products, and services to survive in the market. The proposed methods can help sports-industry SEs to innovate and generate potential business ideas in the future.

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Tokaido is a Japanese firm that manufactures karate belts, uniforms, and other related items. It is one of the world's oldest manufacturing companies of karate training clothes, with a reputation for both great quality and high price. The Sugiura family owns and operates the company, which is situated in Tokyo, Japan."United by Emotion" to be the Tokyo 2020 Games motto. (2020). https://olympics.com/tokyo-2020/en/games/vision-motto/

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Unraveling the Current Issues in and Defining the Status of University Athletics in Japan: A Scoping Study

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The interest in university athletics in Japan has been increasing dramatically over the past few years. This was also reflected in the Second Sports Basic Plan where the promotion of university athletics was clearly placed as one of the national policies. In Japan, where the past few years has seen a change in thinking and action on sports governance in universities, it is critical to have a comprehensive and common understanding of the existing issues in university athletics before promoting university athletics. The purpose of this study was therefore to use a scientific approach to identify the current issues of university athletics in Japan. A scoping study was undertaken, which involved a comprehensive search of literatures from Japan including published peer-reviewed research articles and bulletins, identified a total of 38 studies highlighting the issue of university athletics in Japan. Numerical analysis showed that there were only 2 studies published in peer-reviewed journals. A thematic analysis of the reviewed studies categorized them into 10 issue themes resulting in the development of a framework showing the relationships between issues categorized in the thematic analysis; moreover, the issue themes could be roughly divided into two parts. One of the issue themes “the definition of university athletics” was identified as the biggest concern for university athletics in Japan. Our study reaffirms the fact that each university needs to clarify the definition of university athletics as the first step, and where it is envisioned that the issue themes will play a very important role to develop university athletics in Japan.

***Keywords**:* Student-Athletes, College Sports, Intercollegiate Athletics, Extracurricular Activity, National Collegiate Athletic Association, UNIVAS

Introduction

University athletics in Japan has been seeing a dramatic increase in popularity over the past few years. In February 2016, the Sports Future Development Conference was held by the Ministry of Economy, Trade and Industry (METI) and the Japan Sports Agency (JSA) to discuss measures for the development of university athletics as the sports industry promotion. The Japan Revitalization Strategy 2016 (Cabinet Office, 2016), formulated in June 2016, proposed establishment of the Japanese version of National Collegiate Athletic Association (NCAA) as one of the strategies to develop the sport industry. This was followed by the University Sports Promotion Conference which was held five times (April, May, June, and August 2016, and March 2017) by the JSA (JSA, n.d.-a). The final report published in March 2017 presented a specific plan for establishment of a Japanese version of the NCAA as a breakthrough to develop the potential of university athletic resources (MEXT, 2017a). It was

reflected in the Second Sports Basic Plan (MEXT, 2017b), where the promotion of university athletics was clearly placed as one of the national policies. In March 2019, the Japan Association for University Athletics and Sport (UNIVAS) was established as the Japanese version of the NCAA (JSA, n.d.-b).

Despite the initiatives and growing interest within Japan, university athletics as a whole faces numerous challenges. The final report of the University Sports Promotion Conference (MEXT, 2017a) highlighted the need for addressing various challenges such as the uncertainty of the management system and the ambiguous responsibility in regards to safety obligation due to the position of university athletic activities as extracurricular activities. Quoting the report, it is stated that: "each university should establish a department to supervise student athletic activities, including athletic clubs, and build a framework for the promotion of university athletics within the university."

In the Second Sports Basic Plan (MEXT, 2017b), promotion for the establishment of departments that supervise the field of sports within universities and promotion for the placement of administrators (SA, sport administrators) for 100 universities were specified as well as the establishment of the Japanese version of NCAA in terms of strategies to promote the development of university athletic systems. However, according to a JSA questionnaire to universities (JSA, 2019), only 7.4% (15 universities) have such an organization in place, and only 5% (26 universities) have SAs assigned. From the results of the questionnaire, it is unclear whether the development of the university athletic system is proceeding smoothly. Matsuo & Matsumoto (2019) have stated, "Although 'the Japan Association for University Athletics and Sport' was established as an organization to manage university athletics, the function of the association will be limited due to the lack of communication with each university without the development of the organizational management for athletic activities within universities." In short, even if the UNIVAS was established or the Japanese government promotes such an initiative, it will be difficult to promote university athletics unless each university first promotes the establishment and placement of the framework. Considering that each university has to promote the establishment of a department in order to promote university athletics, it is critical to have a comprehensive and common understanding of what issues are there in university athletics. Reviewing the past literature could not identify any study that comprehensively identified the issues faced by university athletics, though there were studies that focused on individual issues such as the need for umbrella organizations and safety obligations.

Based on the above status (of university athletics) it leads us to two important questions: first, what kind of issues do university athletics confront as a whole, and second, how do they relate to each other or with other organizations around university athletics? In order to develop university athletics in Japan, an overview of issues in university athletics need to be first identified followed by finding appropriate solutions for each. Thus, as a first step, this present study seeks to identify comprehensively the issues facing university athletics in Japan and to understand the relationships therein.

Methods

A scoping study was designed to investigate the state of research for university athletics. Such an approach is suitable for identifying the themes for which new evidence has been generated, and it is also recommended over systematic reviews like in cases of less experimental randomized controlled trials (Levac et al., 2010). As a broad range of studies are included in a scoping study, it is limited to evaluating the quality of evidence from included studies (Arksey & O'Malley, 2005). Arksey & O'Malley (2005) stated that "it can provide a rigorous and transparent method for mapping areas of research". Four general purposes of scoping studies are

as follows, and we quote from Arksey & O'Malley (2005): (1) to explore the range, nature and extent of research activity, (2) to figure out the value of additional full systematic reviews, (3) to summarize and spread the result of research, (4) to recognize the gaps of research in the current literature. Our present study was focused on the point number 3: to collate the literature on university athletics in Japan and to disseminate the results of previous studies.

We used the Arksey & O'Malley (2005) framework, which was developed by Levac et al. (2010) as a specific methodological guide. In the following subsections, the methodology of this study is described according to the five stages identified in the framework. The scoping study selection process was presented as a flowchart in Figure 1.

Stage 1: Identifying the Research Question

The first step was to define the research questions that would be used as a search strategy guideline for the scoping study (Arksey & O'Malley, 2005). The research question below was determined based on the purpose of the scoping study: What are the existing literatures in Japan about the issues of university athletics in Japan?

In this study, the university athletics ('Daigaku Sport' in Japanese) was defined as the athletic programs that are the extracurricular activities in Japanese Universities, and are referred to as "Bukatsu-do" and "Taiiku-kai." The definition does not include recreational activities within the university and Physical Education which is a curricular program in the university.

Stage 2: Identifying the Relevant Studies

Arksey & O'Malley (2005) provided suggestions to use multiple sources in order to identify the primary studies. The present study used electronic databases to identify studies for the scoping study. In Japan, three major electronic databases are commonly used to review research on sports: CiNii, J Stage, and Google Scholar. Due to the budget and time limitations, we included studies written in Japanese only, and reviewed both the peer-reviewed journal articles and gray literature (e.g., research reports).

Stage 3: Study Selection

Although Arksey & O'Malley (2005) underlined the idea to develop the post hoc inclusion standards "based on increasing familiarity with the literature", the particular order for reviewing the different sources was not described. In order to improve knowledge of the relevant studies and develop a deeper common understanding of the inclusion standards, the current study was designed to begin the research selection process using three keywords based on the research question. The search terms consisted of terms identified by the authors to be related to university sport and issues. As we could not find previous literature about university athletics in Japan, we placed the key terms simply as "university", "sport", and "issues". These key terms were broadened (and discarded) and narrowed to cover widely, and the each of the search terms was adjusted to the requirements of individual database (Arksey & O'Malley, 2005; Levac et al., 2010). In total, 46 studies were collected. All three co-authors of this study collectively read and reviewed all the studies in full (i.e., reading each article thoroughly) extracted. Studies were excluded if the full text could not be obtained or if the study were not appropriate. As a result, 10 studies were finally selected for the scoping study. In line with the research question and the field of university athletics in Japan, our research focused on studies designed to examine the issues of university athletics in Japan.

As a next step, search terms for the electronic databases were created based on the terms that appeared in the selected 10 studies. This process involved the first author closely investigating the titles and abstracts of these studies to identify the correct or similar terms that reflected the domain of university athletics in Japan as defined above. The search terms were selected after a review and finalization by the second and third authors. The complete list of search terms used in this study was provided in the Appendix. Following the suggestion of

Arksey & O'Malley (2005), identifying 10 studies allowed for familiarization with the literature and creating a comprehensive search terms set.

Using the search terms, 110 abstracts were extracted from three databases. The first and second authors independently reviewed all abstracts and studied the full articles of the studies believed to be strongly relevant to this scoping study. Around half of the 110 papers were eliminated since they did not satisfy the inclusion standards or had already been identified in the first process. Eliminated papers included studies without proper citations, studies on university athletics in other countries, and studies on Japanese sports as a whole.

Then two authors independently reviewed 38 studies for which one of the authors obtained the full article and judged whether it should be included or not. In case of disagreement among the authors, a third author reviewed the articles and made the final decision to be included or not. Twenty-eight (28) papers were selected through these steps. In total, 38 papers were selected for the scoping study (full reference lists of all studies will be made available upon request).

Stage 4: Charting the Data

In order to identify and integrate key information from the 38 studies, data was extracted from these studies and manually entered into an Excel file to create a chart form (Arksey & O'Malley, 2005). This form contained information on the following variables for each article, in addition to a summary of key results: (a) author(s), publication year, and source; (b) academic field the article was published; (c) study location; (d) study type (e.g., journals, bulletin); (e) study population; (f) issues of the study (e.g., the definition of university sports, establishment of umbrella organization for university sport, safety obligations of universities). This study followed the steps of Levac et al. (2010) in order to facilitate data charting.

The co-authors determined collectively which variables should be coded on basis of the research questions. Next, the first and second authors independently conducted data extraction from the first five studies and discussed the findings to develop a common understand in what data should be extracted. Following this, two authors extracted data from the remaining articles. After all the papers were coded, the co-authors reviewed the data chart forms together and made corrections to the data as needed to ensure that the appropriate information was identified from each paper.

Stage 5: Collating, Summarizing and Reporting the Results

For scoping study, Arksey & O'Malley (2005) proposed two types of analysis, numerical analysis and thematic analysis. We explain each analysis as follows.

Numerical Analysis. The purpose of the numerical analysis was to numerically summarize the nature, extent, and distribution of the studies that were reviewed for the scoping study (Arksey & O'Malley, 2005; Levac et al., 2010). Here, we conducted a numerical analysis of the following key variables (year of publication, academic field, location of study, study type, study target, and issues to be examined in the study) coded to represent the characteristics of the research on the issue of university athletics in Japan.

Thematic Analysis. The goal of thematic analysis was to provide a narrative synthesis by categorizing the studies reviewed into common categories based on certain aspects of the research (Arksey & O'Malley, 2005; Levac et al., 2010). This scoping study was conducted to focus on issues of university athletics in Japan and to organize the research topics. For the thematic analysis, the method of qualitative content analysis was adopted, following the suggestion of Levac et al. (2010). More specifically, the first author identified the first inductive themes by reviewing the information contained in all 38 study chart forms using the approach of inductive category development (Mayring, 2000). Then, the second and third authors checked the definitions of these themes and the representative studies of each theme, and revised them to create the final research themes. Thereafter, the first and second authors independently

assigned one of the themes to each study for coding to assure the reliability of the thematic analysis. When the coding results of the first and second authors were compared, the two authors agreed on 36 out of 38 articles (93.5%). This inter-code agreement is sufficient to satisfy a Cohen's kappa coefficient of .93, which is equivalent to a sufficient inter-coder reliability coefficient of over .70 (Mayring, 2000). The third author considered the two studies that disagreed and decided which topic should be assigned to each study.

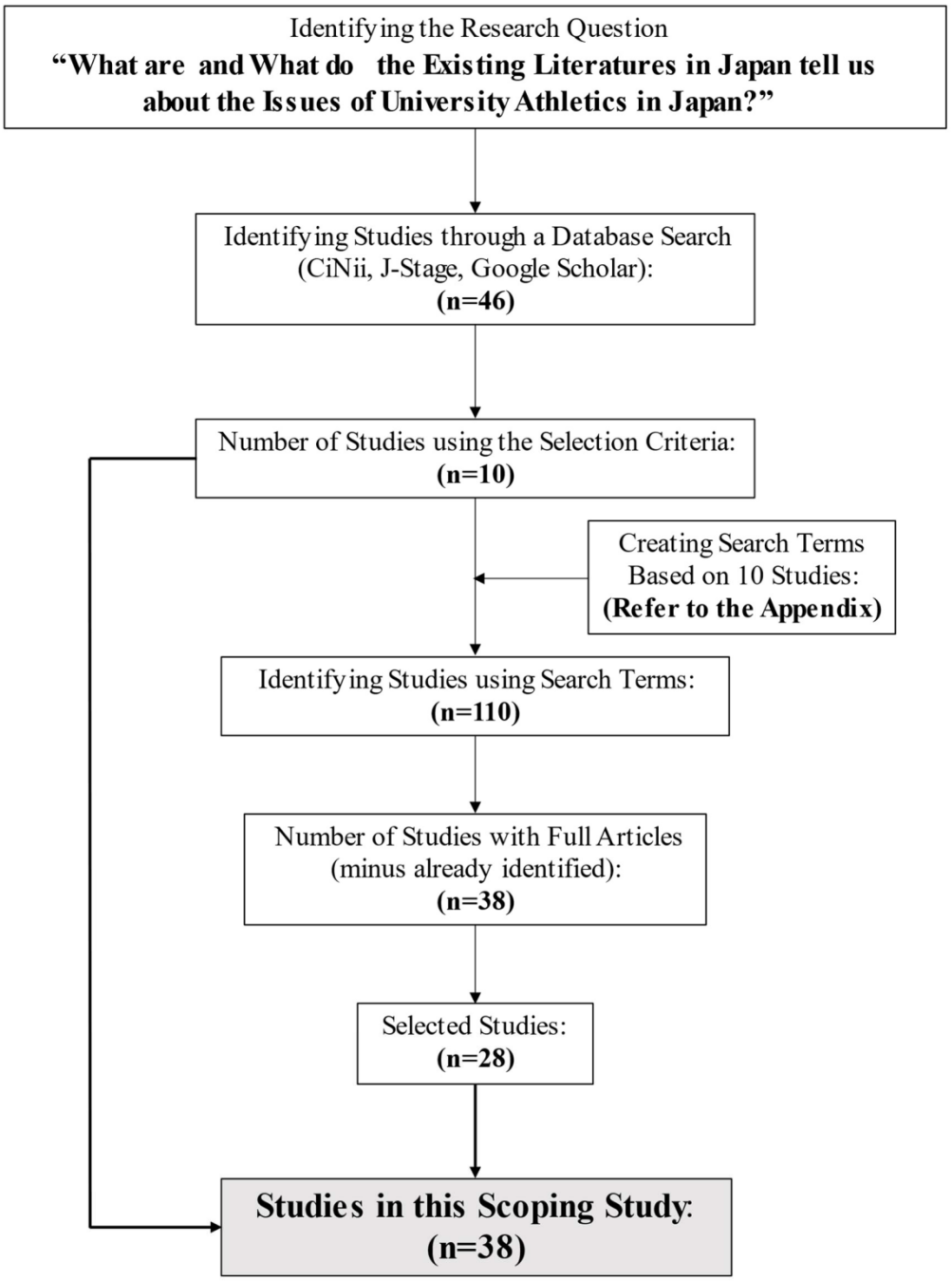

Figure 1. *Selection process for the scoping study*

Findings

Findings from the Numerical Analysis

The findings from the numerical analysis were described below under each of the six sub-headings.

Publication year

The publication year helped reveal the steady increase in research on the issues of university athletics in Japan. For 32 years from 1978 to 2010, there were only 18 studies focused on this topic, however, there were 20 studies for the next 6 years from 2015 to 2020. The largest number of studies were in 2018 (n=6). However, there was no study from 2011 to 2014. The data did not reveal a clear cause for this gap period in the published research.

Academic field

The largest number, 17 of the 38 articles (44.7%) were published in the physical education field whereas others were published in journals related to other fields with education, sociology, business, and law.

Study location

Since this was a study on university athletics in Japan, most of the research (84.2%) was conducted at the universities. Remainder of the studies was published by the Collegiate Federation ("Gakuren" in Japanese; which exist for each sport consisting of each university sport club) and MEXT, with the report published by MEXT were policy recommendations.

Study type

Of the 38 studies reviewed, only 2 studies (5.2%) were published in peer reviewed journals. 24 studies were bulletins, accounting for the majority (63.1%). Two studies were published in the Japan Journal of Physical Education and Journal of Japan Society of Sports Industry.

Study population

Three general categories appeared for the populations of the studies. Twenty-nine (29) studies (76.3%) targeted universities themselves; each 4 (10.5%) examined sport federations and university athletic clubs; the other examined Collegiate Federations (CFs).

Research topic

The issues of university athletics in Japan were classified into 10 topics. The highest number of these research topics was "The definition of university athletics" in 11 (28.9%) studies, 6 of those between 2015 and 2020. The second highest number was "Establishment of umbrella organization for university sports" with 9 (23.6%). "Improvement of international competitiveness", "Governance of sport organizations in university", "Governance of national federations", and "University admission system" were new topics in studies after 2015, with only 2, 2, 1, and 1 study, respectively.

Findings from the Thematic Analysis

From the extracted articles, a thematic analysis was conducted to develop 10 research topics. The explanation and frequency of the 10 themes and how each topic impacts college sports were identified. All themes and their descriptions were presented in Table 1 (see next page). Each topic was described below in order of frequency.

The definition of university athletics

The studies (n=11) within this theme have described the definition and function of extracurricular athletic activities in universities. University athletics in Japan are extracurricular activities and not recognized as an organization within a university, which often leads to issues such as unclear responsibility systems, accounting opacity, and delays in responding to unexpected accidents. Osawa (1982) stated that university athletics is positioned as a field of practical and developmental activities of the physical education curriculum, and it plays an important role in university athletics. However, he also pointed out that the

Table 1. *The 10 identified issues obtained from scoping studies and their descriptions*

Issues	Descriptions	Source Studies	Number of Researches
The definition of university athletics	University athletics in Japan are extracurricular activities and not recognized as an organization within a university, which often leads to problems such as unclear responsibility systems, accounting opacity, and delays in responding to unexpected accidents.	(Onishi, 1978) (Osawa, 1982) (Ishikawa, 1994) (Yamamoto, 2009) (Miyara, 2010) (Nagakura, 2016) (Sato, 2017) (Hagiwara et al., 2017) (Mori, 2018) (Saito, 2018) (Aotake et al., 2020)	**11**
Establishment of umbrella organization for university athletics	University athletics has to function under or be an established umbrella organization. Current organizations have some problems because there are separated into each sport (Collegiate Federation) and teachers serve concurrently with their work.	(Inoue et al., 2001) (Sugiyama, 2003) (Sugiyama, 2004) (Inoue et al., 2010) (MEXT, 2016) (Ikeda et al., 2017) (Nakamura, 2017) (Kawahashi et al., 2018) (Udagawa et al., 2019)	**9**
Career development for student-athletes	It is important for student-athletes to establish a dual career and keep balance between academics and athletics so that it is necessary to create a system for supporting student-athletes and clarify the position of student-athletes and university athletics within the university.	(Okamoto, 2004) (Tsuda, 2007) (Sugita, 2016) (Arai et al., 2018) (Tsukahara, 2019)	**5**
Safety obligations of universities	Because of the unclear definition of extracurricular activities, safety obligations of universities in university athletics are violated whether or not university sports are considered " a part of the educational activities" in universities, and the judgements are different in each court.	(Kato, 1999) (Minamikawa, 2004) (Ozawa, 2007)	**3**
Management of the athletic clubs/ teams	The management issues of the university athletic clubs are: "Taiikukai (Athletic Association within a university)" which supervises university athletic clubs is positioned as the students' independent organizations; the coaching relies on volunteer work of enthusiastic coaches who are also teachers; they have a dual responsibility to be coach/teacher; and these lead to dual power structures, shifting of responsibility, and unclear management responsibility.	(Muraki, 1995) (Ono, 2018) (Ono, 2019)	**3**
Governance of sport organizations in university	The governance of the athletic organization within the university is not satisfactory and the rights and responsibility are not clear due to extracurricular activities even though the university recognized that university athletics has an important role for students recruitment strategy and promoting the school spirit.	(Ono et al., 2015) (Inaba, 2019)	**2**
Improvement of international competitivenes	The supression of international competitiveness is related to the level of student-athletes in university. The issues that cause a decline in the level of university athletics include a lack of funds, insufficient facilities, the treatment (salary payment and guarantee) of coaches and coaching systems, and decentralization of the talented athletes due to increasing the number of universities.	(Fukuyama, 1981) (Matsui et al., 1981)	**2**
Governance of national federations	The student sports federations have been absorbed within the sports federations and have lost their power due to disruption by the sports federations and authorities. Besides, the student sports federations are made up of students and teachers belonging to their extracurricular activities and are often pressurized by the sports federations.	(Ueno, 2018)	**1**
University admissions system	In Japan, a number of universities have a recommendation system for athletes. While it is an important strategy to support amateur athletes in Japan, especially private universities use this system to secure students (keep their income). An additional problem is that it is difficult for students to balance academics and sports due to a lack of placement formally about university sports within universities.	(Ono et al., 2017)	**1**
Development of the sports environment (Equipments, Facilities)	In order to improve extracurricular sports activities, it is necessary to maintain athletic facilities and promote the efficient use of facilities, and to provide the sports environment for exercise freely.	(Namikawa, 1994)	**1**

overemphasis of university athletics on the victory of games prevented it from having an educational role and made it more similar to a training institution for professional athletes. In a recent study, Yamamoto (2009) identified that university athletics has been positioned as one of the business strategies in many universities and emphasized the role as athleticism and a billboard for universities rather than academics, and emphasized that this could lead to the risk of academic decline and business deterioration in universities. Sato (2017) stated that while "universities recognized university athletics as highly beneficial resources", also pointed out that support in terms of funding, human resources, and academics was insufficient, and cautioned that it is important to consider it from the educational perspective. Further, Saito (2018) indicated that university athletics as extracurricular activities are not officially positioned as an organization within the university, leading to unclear responsibility systems and accounting, delays in responding to unexpected accidents and incidents, and inadequate career support.

Establishment of an umbrella organization for university athletics

Nine studies (23.6%) signposted the issue about establishment of umbrella organizations for university athletics. University athletics has to be an established umbrella organization. Current organizations have some problems because they are not only separated into each sport (Collegiate Federation) but also because the teachers continue to teach in parallel. Inoue et al. (2001) pointed out the following two problems with the university athletics organizations in Japan: the existence of different federations for each sport, and teachers serving concurrently as faculty members without full-time staff. In their subsequent study (Inoue et al., 2010), the inactivity of the CFs was mentioned, including the necessity for establishment of university athletic governing bodies based on the studies of others.

Since 2016, when the Sports Future Development Conference and the University Sports Promotion Conference was held and the issue of a Japanese version of NCAA was being raised, studies in this topic have changed to discussions based on the Japanese version of NCAA. Ikeda & Kobayashi (2017) expressed that although they understood the necessity of the establishment of the Japanese version of NCAA, it was also necessary to have a bottom-up movement such as the establishment of conferences in each region. Udagawa & Osaki (2019) pointed out that the discussion of the Japanese version of NCAA started with the business development of university athletics, and mentioned that it is important to establish the organization with focusing on public interest such as human resource development and collaboration with local communities.

Career development of the student-athletes

Five studies described the balance between academics and athletics for student-athletes and the challenges in their careers after graduation. It is important for student-athletes to establish a dual career and keep balance between the academics and athletics. Thus, it is necessary to establish a system supporting the student-athletes and clarify the position of student-athletes and university athletics within the university. Okamoto (2004) stating that "the program that student-athletes can receive both academics and athletic activities is very important for the development of better athletes", was most probably based on the fact that student-athletes immersed in sports are at high risk for their future career away from sports. Tsukahara et al. (2019) realized that "the definition of university athletics and student-athletes within the universities" and "efforts and encouragement to support student-athletes" would help them to have better lives after graduation, and the main challenge will be to see how the universities can fulfill their efforts while being in the university.

Management of the athletic clubs / teams

Three studies (7.8%) addressed the issues related with the university athletic clubs in Japan. The management aspects of the university athletic clubs are: "Taiiku-kai (Athletic Association within a university in Japanese)" that supervises university athletic clubs is

positioned as the students independent organization; the coaching relies on volunteer work of enthusiastic coaches who is also a teacher with dual responsibility to be a coach / teacher, and these lead to responsibility shifting and unclear management responsibility. Based on the comparison of university athletic organizations in the U.S. with those in Japan and of the characteristics of public and private universities, Muraki (1995) identified the major problems in university athletic organizations and one of them is "the dual responsibility of supervisors as teachers and coaches". The state of management in university athletic clubs was considered and a theoretical model of integrated total management in university athletic clubs was presented based on the Five Disciplines created by Peter M. Senge (Ono, 2018). Another theoretical model of organizational management in athletic clubs was developed by referring to the Chris Argyris theory (Ono, 2019).

Safety obligations of the universities

This research topic (n=3) dwelled upon the responsibilities in accidents during extracurricular activities by using past judicial precedents, and all of them stated that it is important whether extracurricular activities are placed as a part of education or not. Because of the unclear definition of extracurricular activities, safety obligations of universities in university athletics are violated in regards to whether university sports are considered "a part of the educational activities" in universities. Kato (1999) stated that one of the points in the lawsuit for violation of the university safety obligation in accidents during extracurricular activities is whether extracurricular activities can be placed as a part of the educational activities, and therefore, "the problem of whether extracurricular activities can be placed as part of the educational activities in universities is the problem of the definition of educational activities." Minamikawa (2004) has pointed out that the concept of "a part of educational activities" plays an important role in school accidents in general. Kozawa (2007) also stated, "the most important thing as a precondition for judging whether the universities violated their safety obligation is to identify whether the safety obligation of the universities covers extracurricular activities".

Improvement in the international competitiveness

There were two studies (5.2%) that analyzed university athletics from the viewpoint of international competitiveness. The slump in international competitiveness is related to the level of student-athletes in university. Fukuyama (1981) pointed out that the drop in the international competitiveness is related to a lack of the university student-athletes. The author attributed the causes of this to: lack of funds, inadequate facilities, the treatment (salary payment and guarantee) of coaches, and the maintenance of the coaching system. In addition, Mochizuki identified the following two reasons for the weakness: the spread-out of talented student- athletes due to the increasing number of universities in Japan, and the system in which teachers have dual roles in teaching and coaching (Matsui et al., 1981).

Governance of sport organizations in the university

This research topic (n=2) investigated the governance of sport organizations in universities. The governance of the sport organization within the university is not appropriate and the rights and responsibility are not clear due to extracurricular activities even though universities recognize the fact that the university athletics has an important role. Ono & Tokuyama (2015) pointed out that the inward and feudal organization of university athletics are behind the problem of governance, and the following three points might have helped create such an organization: the independent operation of clubs because of the extracurricular activities, the principle of keeping order that places decision-making power in elders, and the lack of alternative choices for university athletics. Inaba (2019) claimed the necessity of strengthening governance because of the unclear rights and obligations of university athletics making the responsibilities more complicated. The author stated that the governance of an organization can be realized by clearly describing the relationship between rights and obligations in the contract, and it will

be the fundamental factor for the development of a better university athletic organization.

Development of the sports environment (equipment, facilities)

There was only one (n=1) study that focused on the importance of extracurricular activities from the perspective of promoting life-long activities in the university physical education management. In order to improve extracurricular sports activities, it is necessary to maintain athletic facilities and promote the efficient use of facilities, and to provide the sports environment for exercising freely. Namikawa (1994) stated that while the percentage of students performing physical activities in their daily lives is over 60%, about half of them complain about the athletic facilities.

Governance of national federations

This research topic (n=1) investigated the relationship between the CFs and each National Federation (NF) using the relationship between the Collegiate Swimming Federation (CSF) and the Japan Swimming Federation (JASF) as the example. Collegiate Federations have been absorbed within the NFs and lost their power due to suppression by the NFs and the authority therein. Besides, the CFs are made up of students and teachers who belong to their extracurricular activities and are often pressured by the NFs. Ueno (2018) clarified that the organization of the CFs can be divided into three stages based on its relationship with the federation. While the CSF had a strong influence on and controlled the JASF in stage 1, their position is completely reversed in stage 3 after the stage 2 where they had kept the balance. Today, the CSF has been absorbed as a committee of the JASF and where the CSF has lost its functioning as a self-governing organization.

University admission system

There was one study (n=1) that described the status of preferential admissions to student-athletes for the promotion of university athletics. In Japan, several universities have a recommendation system for student-athletes. While it was an important strategy to support amateur athletes in Japan, private universities in particular use this system to secure students (i.e., keep their income). Ono et al. (2017) found that sports-recommended admissions were placed as a key support for the Japanese student-athlete system, and which are deeply related to the management strategy of each university. While it was an admission system that "provides opportunities for students to enter higher education," it was also an issue that "many student- athletes have difficulties in balancing their academics and athletic activities, and thus not unusual for them to repeat the year or drop out of the university".

Discussion

The overall purpose of this study was to comprehensively review the current issues of university athletics in Japan through a scoping study, and which were individually discussed. Authors believe that such research will not only help to understand and identify the status and / or issues of university athletics in Japan, but importantly also help to provide solutions with an aim towards contributing to their development.

The gap in the number of studies

Of the identified studies (n=39), the largest number of 24 studies were bulletins, and only 2 studies were original articles. This data indicated that there was enough discussion on the issues of university athletics in Japan. In addition, about half of the studies (n=20) were published within the six years between 2015 and 2020. This growth in publication appears to be due to the increasing interest in university athletics in Japan. Since the establishment of the JSA in 2015, there has been a lot of discussion about the promotion of university athletics in Japan. The "Japan Revitalization Strategy 2016" (Cabinet Office, 2016) stated that the establishment of the domestic framework for the promotion of university athletics was one of the sports industry policies, resulting in the activation of the discussion about university athletics in Japan. In 2019, the UNIVAS was

established (JSA, n.d.-b). It is clear that the interest is growing, considering that many university members were involved in the establishment and about 200 universities are enrolled to date (UNIVAS, n.d.). This may lead to such a gap in the number of studies.

The relationships among the issues

In this study, the issues of university athletics were categorized into 10 topics. The 10 issue themes identified in this study are discussed below and the relationship with each issue was presented in Figure 2.

First, the issue of "Establishment of umbrella organization for university athletics" was the second largest issue among the overall issues (n=9). All of the studies argued that it is necessary to have an umbrella organization inside and outside of the universities for the development of university athletics. Particularly, regarding the establishment of an umbrella organization, Japanese version of NCAA was discussed in the final report of the University Sports Promotion Conference (MEXT, 2017a) as the breakthrough to realize the potential of university athletic resources. Japanese version of the NCAA was derived from NCAA in the United States, a cross-university and cross-athletic organization with universities and CFs at the core. The JSA established UNIVAS in 2019, and 221 universities and 32 sport organizations are members as of July 2020 (UNIVAS, n.d.). In other words, such an organization is the fundamental infrastructure for the development of university athletics. Additionally, regarding the governing organization within universities, the Second Sports Basic Plan (MEXT, 2017b) set the target for the establishment of the departments and allocation of human resources in 100 universities. Likewise, it can be said to be the fundamental organization within universities. From these points of view, it was clear that the establishment of the governing organization both inside and outside the university remains to be addressed.

If the umbrella organization for university athletics can be described as "a cross-university and cross-athletic organization", the issues can be divided into two depending on which department needs to be responsible: university side or the national federation's side.

University side issues

The issues on the university side were considered with the backdrop that the universities need to take initiative in solving the said issues. It could be categorized into: "the definition of university athletics," "career development for student athletes," "safety obligations of universities," "governance of sport organizations in university," "university admission system," "development of the sports environment," and "management of the athletic clubs / teams." Furthermore, as a result of considering each issue, it was found that each issue does not exist independently, but are closely related.

1) The definition of university athletics. It was the largest issue identified, and where all the studies emphasized the necessity of defining the university athletics within each university. Moreover, it is clear that this is the issue for each university. Although this issue has been proposed since the 1970s, it has been highly focused on between the years 2016 and 2020 (n=6). Onishi (1978) said, "In some cases, university athletics are designed for school business and advertising while establishing their status as a university athletic club". It was highlighted that in some private universities, it is a prototype that university uses the athletic clubs (extracurricular activity) in a school management perspective. Therefore, the idea of using extracurricular activities for school management has been generally accepted and the state of the university athletics may not have been taken seriously as an issue. Tomozoe (2006) highlighted the fact that it is hard to say universities have taken seriously the state of university athletics in the past and present and that the university athletics has been ignored and neglected. Attention to the development of university athletics was only given in 2016 (Cabinet Office, 2016) when it was

pointed that university athletics in Japan is not officially defined as the organization within universities (MEXT, 2017a). Considering these discussions, it is the reason why the studies on this issue have increased since 2016. Unraveling that "the definition of university athletics" was one of the most important issues for the development of university athletics in that time led many researchers to focus on this point.

Furthermore, this issue was closely related to the topic of the establishment of an umbrella organization. UNIVAS (Japanese version of the NCAA) has thus been established as a cross-university and cross-athletic organization. If UNIVAS follows the NCAA, this organization should be a "member-led organization" (NCAA, n.d.) and it should be led by the universities which are the member of UNIVAS. Matsuo & Matsumoto (2020) stated that "reforms on university sports will not progress unless there are more and more universities that are responsible for the sports activities, thinking about the value of sports and investing in sports clubs", claimed that university athletics cannot be reformed unless each university considers university athletics seriously, even if the UNIVAS was established. In summary, it can be said that this issue and the topic of "Establishment of umbrella organization for university athletics" were strongly interrelated. Further, it also becomes necessary for each university to be able to define the athletics at first.

2) Career development for student-athletes. Balancing both academics and athletics motivation while in university is a critical issue for student athletes. Tsukahara et al. (2019) suggested that the definition of university athletics at each university has a great impact on career support and development. That means it is important to define the definition of athletics within the university first in order to provide sufficient career support and career development for student-athletes. In this context, it can be said that this issue comes from the "definition of university athletics".

3) University admission system. The university sports referral system belonged to this category. Ono et al. (2017) explained about the future referral system, where the key point is the state of university business management and university athletics; in other words, to define the university athletics is a precondition.

4) Governance of sport organizations in university. Inaba (2019) emphasized the necessity of strengthening governance from the backdrop of serious accidents and harassment in university athletics in recent years. In this regard, the final report of the University Sports Promotion Conference (MEXT, 2017a) states, "Since athletic club activities are not placed in the university organization and managed mainly by students, the clear management is basically up to each university, and the responsibility system is not clear." The lack of a definition of athletic club activities within the university has led to an unclear governance system. In other words, it can be said that defining the "definition of university athletics" will help to clarify the responsibility system, and eventually lead to realize the improvement of the governance of athletic clubs.

5) Management of the athletic clubs/teams. The issue of "management of the athletic clubs" was closely related to the issue of the "governance of sport organizations in university". Muraki (1995) pointed out that the organizational structure of athletic clubs is heavily weighted on the coach, which leads to an unclear responsibility system. Based on the idea that the development of "governance of the athletic teams" leads to greater responsibility system in universities, it can be said that the management system in the teams is an issue caused by the "governance of the athletic teams".

6) Safety obligations of universities. Clearly it was very important to consider whether university athletics activities are "part of educational activities" or not. As university athletic activities are well-established as part of the educational activities (Minamikawa, 2004), the safety obligation of universities covering extracurricular club activities is a general understanding (Kozawa, 2007). Therefore, as long as university athletics are extracurricular activities, it would be difficult to identify the responsibilities for accidents. In other words, the

safety obligations of universities could be clarified if the definition of university athletics was clearly defined.

7) Development of the sports environment. Furthermore, it is believed that the "development of the sports environment" was connected to the issue of the "safety obligations of universities". Mizutani & Sakurai (2020) stated that the maintenance of facilities and the improvement of the safety management of coaches prevent injury (accident) during athletic activities in regards to the safety considerations. The improvement of facilities and the safety management system for coaches along with the development of the sports environment, will lead to the guarantee of the safety of students. Yet, the coverage of the guarantee of safety for students depends on the level of safety obligation that the university should be obligated. Indeed, this is an issue that could be resolved by defining the "safety obligations of universities".

In summary, it was discovered that the issues on the university side were all closely connected with or caused by the "definition of university athletics". From this point of view, the most important issue to solve for the university side was to look into the "definition of university athletics".

NF side issues

The issues on the NFs side were considered to be suitable for "governance of national federations" and "improvement of international competitiveness." These issues were suggested to be the responsibility of the National Federation.

1) Governance of national federations. This category described the relationship between the JASF and the Collegiate Swimming Federation as an example. Recently, the Collegiate Swimming Federation has been completely assimilated into the JASF and no longer works independently. This is certainly true for other CFs as well. Inoue (1975) highlighted the fact that many CFs have been completely absorbed by the NFs, stating "Many Collegiate Federations are under the control of their NFs which are members of the Japan Sport Association (JSPO), therefore making it difficult for the university to reflect their intentions even though they are Collegiate Federations". In July 2020, there were 32 organizations associated with the UNIVAS (UNIVAS, n.d.). Some of them are affiliated as CFs, while others are affiliated as the NFs themselves. However, in light of the fact that CFs were completely absorbed into NFs, it is no different for any sport to be regarded that the NFs are members. It means the university athletics is under the governance of the NFs, and the game schedule is adjusted to other groups within the NFs such as professional leagues and world championships. As a result, official games were held on weekdays when there were classes, creating an official absentee system that does not exist in the education system, thus interrupting student life (Ueda, 2018). From this perspective, it can be said that the issue is also how NFs should govern university athletics.

In consideration of this issue, Ueda (2018) pointed out in the same publication that it is important to "fundamentally reconsider the educational significance and definition of club activities," which are extracurricular activities in the educational system. It is necessary to identify the educational significance and definition of university athletics in the UNIVAS. More than 200 universities are members of UNIVAS. Therefore, the definition of university athletics defined by UNIVAS should in reality be the sum of the "definition of university athletics" clearly defined by each university member of UNIVAS. In other words, the governance of NFs cannot be improved without each university clearly defining the university athletics. In this context, it can be said that the "definition of university athletics" is an issue for the university side, yet indirectly connected to "governance of national federations."

2) Improvement of international competitiveness. Since international competitiveness was greatly related to the promotion of university athletics, the improvement of international competitiveness is cited as an issue for university athletics. Fukuyama (1981) indicated that it is necessary to consider the integrated strengthening plan to improve international competitiveness,

and that university athletics needs to be placed within such a plan. There is no consideration for the student university life and academics of the student-athletes involved. Since this literature was written by the JSPO, it can be expected that university athletics are positioned as the subject of each NFs and the promotion of university athletics is discussed in this literature. Therefore, it can be said that while this is an issue for university athletics, the issues are actually for the NFs.

As explained above, two issues on the NFs side were examined: "governance of national federations" and "improvement of international competitiveness." Although there was no connection between the two issues, it was found that the "governance of national federations" was indirectly connected to the "definition of university athletics." While "improvement of international competitiveness" was described as an issue for university athletics, it should also be considered as an issue for the NFs.

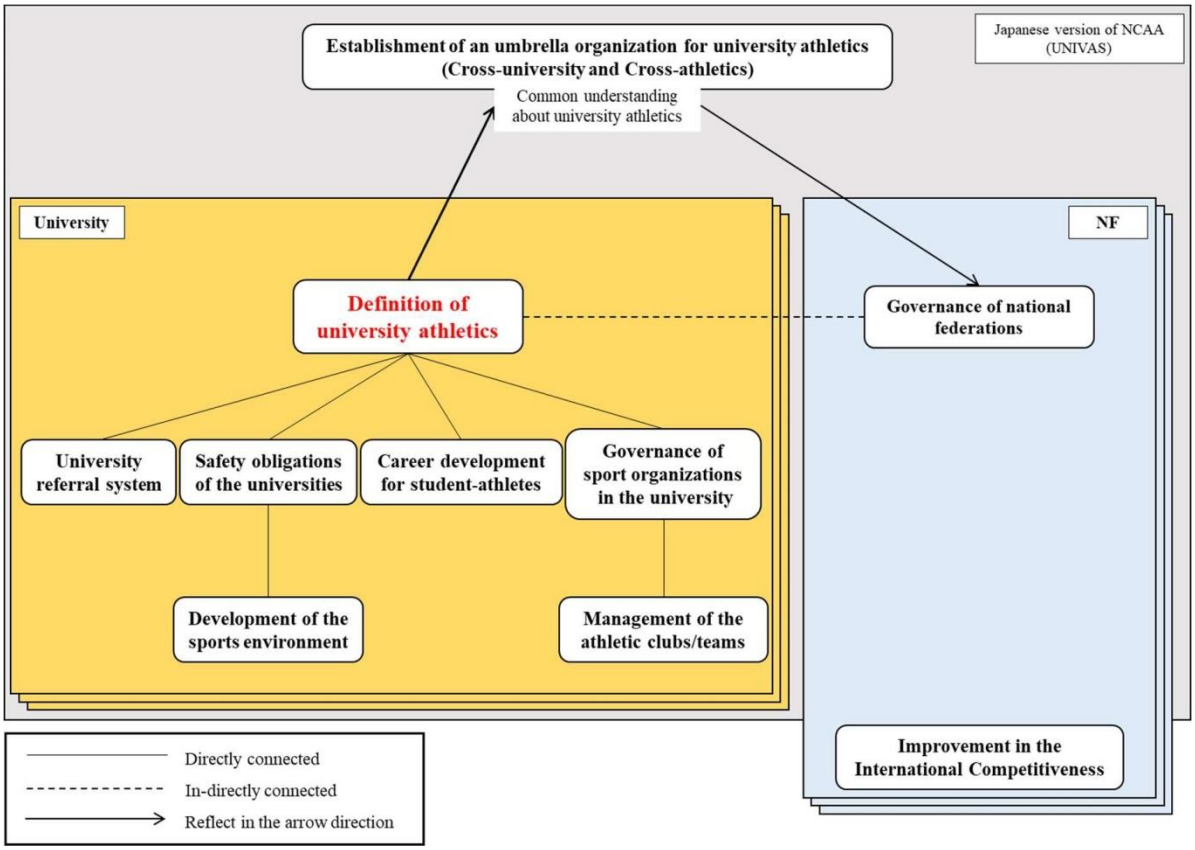

Figure 2. *Framework showing the relationships among issues*
Note. Solid lines indicate that each issue has a direct relationship. The arrows indicate the elements of the starting point from the end point. The dashed line indicates indirect relationships between the issues.

Conclusion

Through this research, authors identified 10 issues related to the aim of the study and stated research questions, where some of them could be linked to each other. The issues could be divided into two: the university side and the NFs side, centered on the "establishment of an umbrella organization." Seven issues were categorized as the university side, and 26 literatures were extracted. It was found that all the issues were closely related to or caused by the "definition of university athletics." The most important issue was the "definition of university athletics." On the other hand, two issues were categorized as the national federation side, and

the number of articles was three. Despite the fact that the issues were not related to each other, it was identified that the "governance of national federations" was indirectly related to the "definition of university athletics."

According to the number of studies and issues and the relationship between issues, it can be said that solving the issues on the university side will have a great impact on the development of university athletics. In particular, the central issue of the "definition of university athletics" was a fundamental issue, and unless this issue can be elucidated, it would be difficult for university athletics in Japan to develop. This is one of the reasons why the role of each university is extremely important in the development of university athletics. Regarding the issues on the NFs side, this study was limited to three studies. There is a possibility that more issues can be identified by researching university athletics focused on NFs, and this is a promising area for future research.

Even though the number of studies was limited, the authors were able to identify the issues of university athletics in Japan being currently discussed. Awareness towards university athletics in Japan has been increasing in recent years, and it can be expected that more research will be conducted in the near future. We believe that as more studies will be accomplished it will lead to the identification of more specific issues and topics. A schematic representation of the current research study was presented in Figure 3 dealing with the issues, methodology, and findings in light of role of each university towards development of University athletics in Japan.

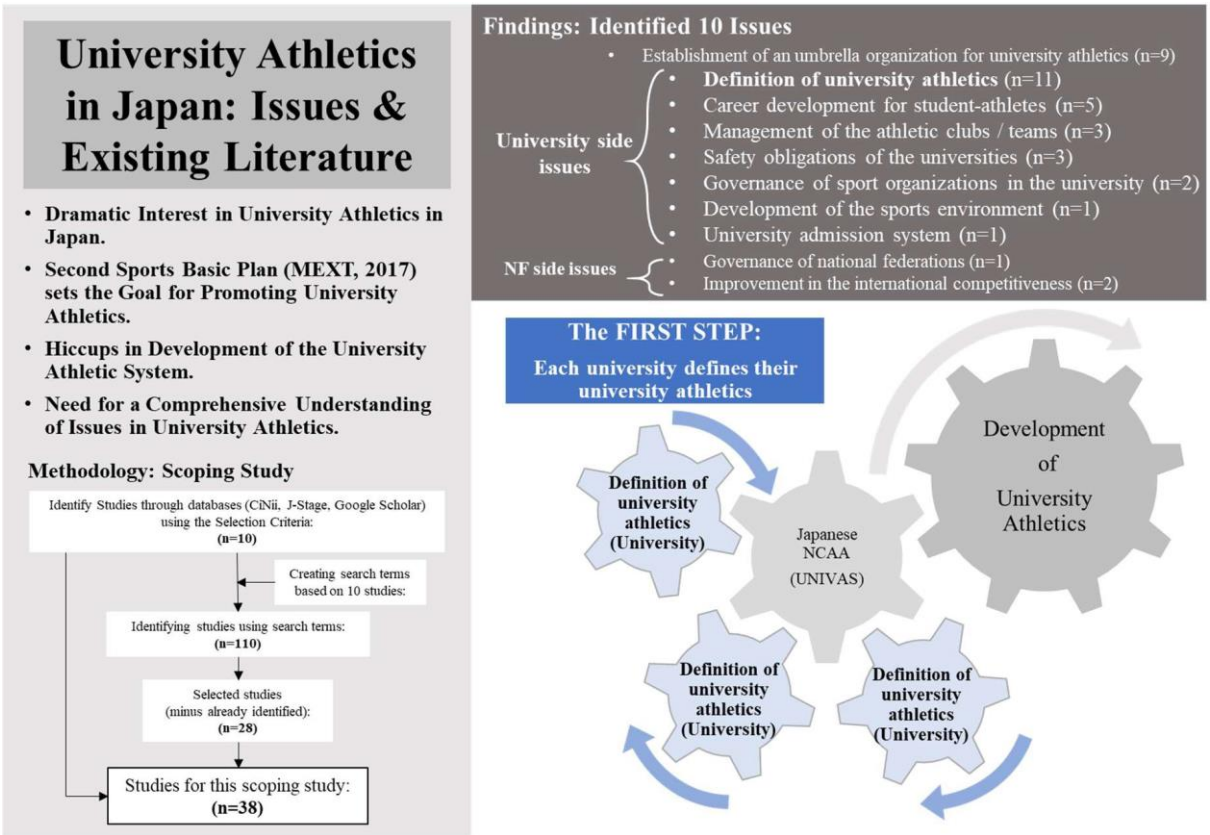

Figure 3. *Schematic representation of the scoping study question, approach and identified issues*

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Appendix 1. *Search terms for this scoping study*

Search Terms Used

Three sets of search terms below are connected with AND used for searching the database:

1. Search terms used to represent "university ("daigaku" in Japanese)": "structure of organization" or "configuration" or "university" or "school" or "college" or "学校経営" or "大学入試" or "学校" or "教育機関" or "学生" or "生徒" or "課外活動" "学連" or "学生競技団体" or "入試" or "推薦入試" or "特待生" or "キャンパス"

2. Search terms used to represent "sports ("supo-tsu" in Japanese)": "college sport" or "National Collegiate Athletic Association" or "NCAA" or "university athletic clubs" or "university athletes" or "amateur sports" or "sports management" or "coaching roles" or "team management" or "dual responsibility of teacher-coach" or "大学スポーツ" or "体 育会運動部" or "大学運動部" or "アマチュアスポーツ" or "学生競技者" or "スポーツマネジメント" or "地域スポーツ" or "地域貢献" or "運動" or "競技" or "生涯スポーツ" or "アスレチック" or "アスリート" or "選手" or "プロスポーツ" or "クラブ" or "アスレチックデパートメント" or "スポーツ局" or "体育局" or "日本版 NCAA" or "学生アスリート" or "UNIVAS" or "全国大学体育連合" or "課外スポーツ活動" or "学生スポーツ" or "スポーツビジネス" or "スポーツ組織" or "チーム" or "大会" or "オリンピック" or "スポーツトレーナー" or "コーチ"

3. Search terms used to represent "issues ("kadai" in Japanese)": "issue (s)" or "challenge (s)" or "problem (s)" or "discussions""問題" or "研究" or "テーマ" or "議論"

The Development of Horse-Riding Tourism in Mongolia

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This study aims to: identify the current situation that the horse-riding tourism industry faces with in Mongolia, provide suggestions to the horse-riding tourism related industry organizations and government as well as the academic researchers who are interested to study the issues related to horse-riding tourism. This study refers to various sources from previous literature, statistical data, and reports related to the horse-riding tourism issues. By using of SWOT tool for analyzing the current horse-riding tourism environment in Mongolia, we find that Mongolia can use existed advantages (e.g. beautiful scenery and traditional Mongolian culture) and needs to improve the disadvantages, including current service quality current the lacks of horse-riding tourism service standards and tourism development strategies to regulate and guide the growth of horse-riding tourism industry. In order to promote the horse-riding tourism industry in the State of Mongolia, government needs to work with the academic scholars and practitioners to develop strategies to deal with the following tasks: promoting the Mongolian unique cultures, improving the traffic inconvenience, increasing the common awareness of horse-riding tourism, creating the service criteria of horse-riding tourism, reinforcing the professional competencies by training the horse-riding tourism industry related practitioners, improving trails system, consider the sustainable development, taking the chance of COVID-19 pandemic to improve the horse-riding tourism service qualities to increase the marketability in Mongolia.

***Keywords*:** sports industry, marketing strategy, staff performance and service mindedness, risk management, trail riding

Introduction

Tourism is considered a promising sector in Mongolia. The tourism content in Mongolia is diverse, including its unique traditional and nomadic culture, burgeoning popularity as a destination for outdoor and adventure activities. Mongolia has vast land and abundant resources, a sparse population, a labor shortage, and a weak industrial base. Its economic development depends firstly on mining, secondly on agriculture/animal husbandry with its processing industry, and thirdly on tourism. It can be said that tourism is Mongolia's future strategic pillar industry (Gantumur, 2020). Compared with the development history of world tourism (Dogru et al., 2020), Mongolia's tourism started relatively late. The initial development of Mongolia's tourism resources only began in the 1990s (Badarch, 2016; Shircliff, 2018), and many areas are still undeveloped (Gantumur,

2020). The Mongolia government hopes to welcome 1 million visitors per year (Tsai & Sukhhad, 2018). Mongolia received most overseas tourists from China, Russia, Korea, Japan, and others from European (Tsai & Sukhhad, 2018). To reach the goal of increasing the number of tourists to Mongolia to1 million or more, to developing sports tourism, and cultivating sports tourism in multiple ways (Peric et al., 2017), such as horse-riding tourism, to attract more tourists (Helgadóttir & Sigurðardóttir, 2020) from many countries can be considered.

Horse-riding tourism can become a real economy, especially supporting the development of rural areas in several countries, especially in Europe, North America and Australia (Ollenburg, 2005). However, many tourism promoters move into running tourism business by default (Gantumur, 2020). In this respect, Buchmann (2014), Sigurðardóttir & Helgadóttir (2015) pointed out this business sector needs to reveal more apparent paths to an analysis of their service quality based on tourists' demand.

However, there is limited research for the Mongolia sport tourism promoters to refer to when dealing with this business. Therefore, this study aims to analyze the current situation that horse-riding tourism faces with Mongolia and provide suggestions to the horse-riding tourism-related industry organizations and government as well as the academic researchers who are interested in studying the issues related to horse-riding tourism.

II. The meaning of horse-riding tourism

1. The positioning of horse-riding within tourism

Earlier tourism is defined as the "temporary movement to a destination outside the normal home and workplace, the activities were undertaken during the stay, and the facilities created to cater to the needs of tourists" (Mathieson & Wall, 1982). While a visitor is a person who travels outside the normal environment for less than one year for any major purpose, such as recreation, leisure, business, health, education or any other purpose. This scope is much broader than the traditional understanding of tourists, which includes only holiday for leisure (UNWTO Guidelines, 2019).

From 1990s, the changing of general lifestyle fueled demand for rural tourism, it was the neutrophilia, lost connection with rural space, and search for authenticity that spurred renewed demand for holidays in rural areas. Increased interest in horses and horse-riding in worldwide reflects the growing demand for equestrian tourism (Tomljenović et al., 2018). Horse tourism can be viewed as part of several sub-sectors of the tourism spectrum, including nature-based or outdoor tourism, adventure tourism, rural tourism, sports tourism, tradition, and heritage tourism, and event tourism (Ollenburg, 2005; Torkkola, 2013; Vaugeois, 2014; Evans et al., 2014).

Equestrian/horse- riding tourism is commonly defined as adventure tourism (Beedie, 2003; Buckley et al., 2008; Pomfret, 2006). As Buchhman (2014) defined horse tourists as tourists who at some stage or other during their holiday used the horse as a model of transportation, and to whom riding is an important part of this holiday, with the minimum of one overnight stay away from home. The sector is very diverse, with horses being enjoyed

actively through riding, competition and training, and passively, through spectating and involvement in religious and other spectacles (Evans & Pickel-Chevalier, 2015).

Regardless of the diversity of the horse cultures from European countries, North America, and Australia, horse-riding tourism has become a real specific activity, defined by its plurality, and supporting the local and global economy of the regions and countries involved. From the diversity of definitions, it can be concluded that horse-riding tourism is part of many sectors such as sports tourism and adventure tourism.

2. Keys to the success of horse-riding tourism

2.1. Branding management of horse-riding tourism in the specific region

In many countries, the horse is currently a tourist attraction and is an integral part of national identity and image (Beeton, 2001; Helgadóttir & Dashper, 2016; Helgadóttir & Sigurðardóttir, 2020; Leinonen & Dalke, 2017; Pickel-Chevalier, 2015; Schmudde, 2015; White, 2011).

Horses-based activities have been used as destination branding for tourism in countries such as the USA (Nicholls, 2014; Kline et al., 2015) and Australia (Ollenburg, 2005), Canada (Evans, 2011), France (France, 2011; Pickel-Chevalier, 2015), Hungary (Obadovics & Kulcsar, 2015), Ireland and Iceland (Buchmann, 2014; Helgadóttir & Sigurðardóttir, 2020), Mongolia (Buckley et al., 2008) and Turkey (Belber & Erdoğan, 2019), Spain (Castejon & Rodríguez, 2012) and Finland (Tienhaara et al., 2017).

In Iceland, horse- riding tourism is developing for several decades as an important industrial sector, and academic researchers contributing to horse-riding tourism studies, such as Dashper et al. (2021), Helgadóttir & Daspher (2016), Helgadóttir & Sigurðardóttir (2018), Schmudde (2015), and Sigurðardóttir & Helgadóttir (2015). Horse-riding tourism is based on heritage and keeping a traditional culture of horses' daily use (Helgadóttir, 2006), and horses are famous and image and promote Iceland tourism (Helgadóttir & Dashper, 2016; Schmudde, 2015; Sigurðardóttir, 2018).

The academic interests in the horse-related industry and especially horse-riding tourism has increased and extended to many disciplines in the last three decades. All of these studies recognize countries that have developed horse-riding tourism as an essential sector to make a significant economic contribution and labor development of rural areas.

2.2 Critical factors of customer satisfaction in horse-riding tourism

Previous studies indicated the importance factors of providing quality services for horse-riding tourism on the demand side. As early research in Kentucky, America by Blackwell et al. (2006) determined the travel cost approach to analyze individual trail visitation behavior. They found the distance to the trail site, various trail characteristics, such as trail length, and authenticity to increase the visits. This study suggests that the trail system is at least 15 miles in length, ensuring that loop trails are available, placing trails near water sources, marking trails, providing full-service camping facilities near trailheads back-country camping, and offering nice sights on the riding trails. Besides, Kline et al.

(2015) indicated that facilities should be developed to meet the needs of the users by providing a visitor-friendly experience that includes amenities, signage with distance and grade markings, and sufficient parking that will facilitate horse trailers.

Sigurðardóttir and Helgadóttir (2015) evaluated five important factors (each factor has various elements), including staff performance, horses, riding trails and gear, and facilities in customer satisfaction. They found that the most important factors are staff performance and service attitude, riding trails, then horse quality. Besides, the authors of this study suggested increasing knowledge by degrees of employee's essential in horse-riding tourism to ensure service quality and customer satisfaction, moreover, that marketing strategy factor needs to be in further research for develop equestrian tourism.

The main task of promoting a business is to attract individuals to their target products and services The goal is to increase distribution, turnover, or market share (Sidali et al., 2013). Meanwhile, Sigurðardóttir and Steinthorsson (2018) identified the importance of rural micro cluster development to generate mini-industrial supply chain in horse tourism. The study found the important concerning factors were knowledge of horses and services to develop equine tourism in Northwest Iceland.

In recent research by Belber and Erdoğan (2019), the service quality of domestic and international tourists were evaluated, total of 323 participants joined horse trekking in Turkey, Nevşehir area. The average international visitors have negative responses to their insurance services and staff's instruction for horse- riding in a foreign language. Therefore, they suggest staffs should improve their language abilities necessarily.

Another study by Plea (2015) revealed horse-riding customer require that comfort and authenticity and are attracted by the beauty of nature, diverse landscape forms with rich cultural heritage. The research suggests accommodation should be comfortable, not necessarily high level, and serve traditional food and drinks. It is also important to the tradition of horse breeding, quality of horses, and professional staff skilled in riding and horses (Pickel-Chevalier, 2015).

The safety and risk management are the essential key factors to customer decision-making (Peric et al., 2018; Sigurðardóttir & Helgadóttir, 2015). Horse-riding tourism consists of soft adventure tourism characteristics, reduced risk and excitement, challenge, and stimulation, and induces preparation and anticipation (Page et al., 2005). Therefore, safety for riders and horses should be guaranteed, especially if the visitors are children (Buchmann, 2014; Sigurðardóttir & Helgadóttir, 2015), same results by Peric et al. (2016), the that showed that safety issues is the element of the business model in sport tourism customer value, service quality, and safety are high on their plan.

In conclusion, the successful horse-riding tourism business to influence the customer satisfaction factors can be drawn to 6 critical factors, including planning product strategy, marketing strategy, staff performance, quality of horses, risk management, and trail riding.

III The process of analyzing the horse-riding tourism situation in Mongolia

This study refers to literature relate to horse-riding tourism development in Mongolia and the situation analysis (SWOT) concept to analyze the situation. Situation analysis captures the key strengths and weaknesses within the company and describes the opportunities and threats facing the company (Kotler & Keller, 2011), which provides an understanding that an organization must adapt its various internal activities to external realities to achieve the expected objectives (Tambunan, 2020).

1. SWOT analysis concepts

SWOT analysis is a crucial tool for evaluating any area. Strength is the utilization and management of an organization's potential or resources effectively in order to achieve its objectives. Weaknesses is the limitations or inability of the resources of the organization so that it can hinder the achievement of goals (Kotler & Keller, 2011). Opportunities is a situation in the general environment that can support an organization to achieve strategic competitiveness (Hunger & Wheelen, 2011). Threats is a situation in the general environment that can disrupt the activities of an organization in achieving its strategic competitiveness.

EFAS (External factors analysis summary) and IFAS (Internal factors analysis summary) are two techniques aimed at evaluating the external and internal environment of the company, and the performance of the company in these environments (Kotler & Keller, 2011; Hunger & Wheelen, 2011). For each factor it is thus possible to calculate a weighted score (rating multiplied by weight) showing the contribution of this factor into the overall score of the company. EFAS model includes a set of opportunities and threats for the company, and IFAS model contains the list of the company's strengths and weaknesses (Kotler & Keller, 2011; Hunger & Wheelen, 2011; Tambuna, 2020). IFAS and EFAS models also allow to prioritize between factors, and the weighted scores for each factor can be used to evaluate optimal strategic decisions for the company (Hunger & Wheelen, 2011).

According to Hunger & Wheelen (2011), generate a series of possible strategies for the company or business unit under consideration based on particular combinations of the four sets of factors: SO Strategies are generated by thinking of ways in which a company or business unit could use its strengths to take advantage of opportunities. ST Strategies consider a company's or unit's strengths as a way to avoid threats. WO Strategies attempt to take advantage of opportunities by overcoming weaknesses. WT Strategies are basically defensive and primarily act to minimize weaknesses and avoid threats.

2. SWOT analysis process

The process of SWOT analysis for the Mongolia current horse-riding tourism development situation are as follows:

(1). Presenting situation analysis of current horse-riding tourism development in Mongolia.

(2). Developing of IFAS and EFAS (Tambunan, 2020; Hunger & Wheelen, 2011):

A. Identifying internal factors: listing the strengths and weaknesses factors with items revealed from literatures related to important factors of customer satisfaction in horse-riding tourism and evaluated current Mongolian tourism situation.
B. Identifying external factors: listing the opportunities and threats from horse-riding tourism theories related ~~to~~ literatures, and the current Mongolian tourism situation.
C. Weight: assigning a weight to each factor ranging from 1.0 (the most important) to 0.0 (the less important) based on that factor's probable impact on a particular Mongolia horse-riding tourism current position. The higher the weight, the more important is this factor to the current and future success of Mongolia. All weights must sum to 1.0 regardless of the number of factors.
D. Rating: the rating scale for positive factors of strength and opportunities are from 1 (very weak) to 4 (very strong), for the negative factors of weakness and threats are from 1(very strong) to 4 (very weak) based on particular Mongolian current horse-riding tourism's response to reflect the factor.
E. Weighted score, multiply the weight for each factor times its rating to obtain the factor's weighted score.
F. Calculating the total score for each IFAS and EFAS and plot into SWOT Matrix Diagram. If IFAS and EFAS are plotted: (a) in the first quadrant, then the company or business need to adapt aggressive strategy; (b) in the second quadrant, then the company need to adapt conservative strategy; (c) in the third quadrant, then the company need to adapt defensive and; (d) in the fourth quadrant, the company need to adapt competitive strategy (Tambunan, 2020; Hunger & Wheelen, 2011).

IV. Findings and Discussions

1. Current horse-riding tourism development situation in Mongolia

The annual tourism statistics report of 2018 shows that the tourism economy in 2018 has grown to achieve the value of 526 million USD in Mongolia. In 2019, Mongolia began to formulate and implement a development strategy to increase the GDP significantly was 3.4% proportion by increasing the tourism industry's development, and the revenue generated amounted to USD 607 million, as well as received 577,262 international tourists (National statistics office of Mongolia, 2019). However, international tourists drop to 7,798, followed by the worst year on record in 2020 (National statistics office of Mongolia, 2021), when the COVID-19 pandemic led to the closure of international borders, canceled flights. The global pandemic negatively affected the 2020 tourism season, as revenue from international visitors fallen down 94% year-on-year (World Bank, 2021).

According to the World Travel and Tourism Center charts, by 2027, potential growing and spending on tourism industries then benefit employment in Mongolia can be expected. The direct contribution of tourism GDP forecast to be 960.1 million USD. The hospitality

and tourism sector's capacity are more than 620 hotels, 370 tourist camps and lodges, 520 tour operators (Gantumur, 2020). However, it has been years that the overall development of tourism infrastructure in Mongolia is insufficiently, and the allocation of tourism has not yet been systematically (Flores et al., 2015). Surprisingly, the amount of horses are more than the human population in Mongolia. Mongolia; the number of horses with 4.2 million horses (National Statistics Office of Mongolia, 2019), there is no research revealed the demand for customer services of horse-riding tourism in Mongolia.

Previous studies pointed out Mongolia tourism general background and very brief horse tourism noted and mainly on genetic analysis of domestic and the wild horse (Fijn, 2017; Matsuzawa, 2019), cultural landscape attraction in Mongolian tourism (Buckley et al., 2008), archaeological evidence for horse pastoralism (Taylor, 2015) tour operator business perspectives (Shircliff, 2018), and importance of cultural identities (Gantumur, 2020). Many companies carry out horseback riding tourism, horses are an important part of Mongolian adventurers' interests and destination image (Buckley et al., 2008). Either way, all the options offer unique opportunities to get in touch with nature, animals, and different communities and ethnic groups (Shircliff, 2018).

Buckley et al. (2008) analyzed five primary data sources to test marketing, surveys, product design, perceptions, commoditization, and tourist satisfaction in the Mongolian cultural landscape. The study concluded that the key touring attractions of Mongolia should be grassland, nomads, horses, and ger(yurt). Shircliff (2018) interviewed employees from 15 different companies to understand how Mongolian culture is perceived and adapted from a business perspective. The result shows that Mongolia tour companies are lack of standardized service protocol, making individual companies responsible for tourist activity, and government support for and human recourse.

Following the route of Emperor Genghis Khan, tour operator offers small-group tours with a local English-speaking guide. Besides, the travelers are accompanied by horsemen native to the area, who still maintain a very close relationship with their horses (Tugjamba et al., 2021).

The most accessible places for horse-riding adventure are the Terelj camps and the Khovsgol Nuur lake (D'Anieri, 2018). Several operators schedule day trips from the capital, Ulaanbaatar, through the Gorkhi-Terelj National Park, some 55 kilometers to the northeast, a reserve open to tourism in 1964 and declared as a national park in the 1990s (Flores et al., 2015).

Another area to horse-riding is the Hustai National Park, in Central Mongolia, created specifically to protect "takhi", the Mongolian wild horse (Matsuzawa, 2019; Pickel-Chevalier, 2015); an immense steppe where wild boars, wild cats, wolves, and lynx coexist. In addition to the tour operators, some Mongolian families live around the park and provide their horses for renting. Before launching into a riding, one must take classes on the handling of a Mongolian horse a short, robust, and semi-wild breed and remember that must always ride on the left this is how they are trained.

2. Discussions

Based on the situation of horse-riding tourism development in Mongolia, this study develops the list for internal factor analysis summary (shown in table 1). Then authors evaluated the performance and importance of factors according to IFAS and EFAS rules. As we can see in the strength below, it is a supporting factor in Mongolian horse-riding tourism development. The weaknesses mentioned in the table can be resolved by establishing an efficient and effective management strategy by the government involving.

Table 1.

Internal factor analysis summary (IFAS)

Strength (S):	Weight	Rate	Weighed score
1. Beauty of nature	0.07	4	0.28
2. Variety of horse-riding relative activities	0.06	4	0.24
3. Clean atmosphere of quality horsemanship	0.05	4	0.20
4. Nomadic culture, and rural character	0.08	4	0.32
5. Obligatory use of riding hats and shoes appropriate	0.06	4	0.24
6. Interesting routes and sights	0.05	4	0.20
7. Diversity of the horse-riding trails	0.06	4	0.24
8. Long-distance horse-riding trails	0.06	4	0.24
Total Strength			**1.96**
Weaknesses (W):			
1. Considering the horse's environmental impact	0.06	3	0.18
2. Catering and accommodation services	0.05	2	0.10
3. Defining the target market of tourists' behavior	0.06	2	0.12
4. Social networks and word of mouth communication	0.05	2	0.10
5. Fairness of price	0.06	3	0.21
6. The horses are not calmness	0.07	2	0.14
7. Professional services of employee and languages skills	0.08	2	0.16
8. A risk management plan: to address problems associated with insurance & health and safety risk management.	0.08	2	0.16
Total Weaknesses			**1.17**
Total (S-W)	**1.00**		**0.79**

The external factor analysis summary (EFAS) results on the development of horse-riding tourism in Mongolia (shown in Table 2).

Table 2.

External factor analysis summary (EFAS)

Opportunities (O):	Weight	Rate	Weighed score
1. New jobs opportunities: high forecasted tourist growth will necessitate increased employment opportunities in horse-riding tourism industry.	0.20	4	0.80
2. To increase the demand of practical training and educational programs	0.15	4	0.60
3. To enhance awareness of the horse tourism industry's contributions to the local economy	0.10	4	0.40
4. Broad development of horse-based tourism industry with the potential to build economies of scale and interest.	0.15	4	0.60
5. International tourists' destination for horse-riding tourism and promote other beautiful places such as Huvsgul Lake and Terelj National Park etc.	0.10	4	0.40
Total opportunities			**2.80**
Threats (T):			
1. Environmental impact caused by horses- riding tourism development.	0.10	2	0.20
2. Unexpected injury caused either by horse or customer.	0.10	2	0.20
3.Tendency impacted by COVID-19 or other disaster for tourism industry.	0.10	2	0.20
Total threats			**0.60**
Total (O-T)	**1.00**		**2.20**

3. SWOT analysis diagram

After evaluating of IFAS, the strength is 1.96, while the weakness is 1.17. Thus, their difference is 0.79. Based on EFAS, the opportunity is 2.8, while the threat is 0.6. Thus, their differences is 2.2 (shown in Figure 1).

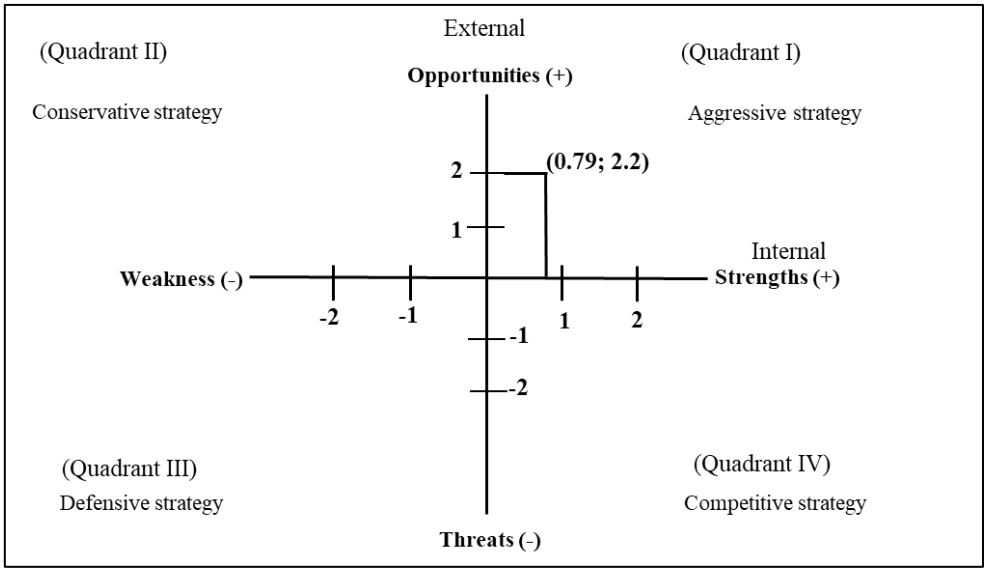

Figure 1. SWOT matrix diagram

The figure 1 clarifies that the tourism object of Mongolia horse-riding tourism as a touring attraction in strong internal and external conditions, wherewith this condition the tourism object of Mongolia has a potential opportunity to be developed horse-riding tourism. SWOT analysis results show that optimal strategy is chosen in the first quadrant as aggressive SO strategy. It is using the certain ways of organization's internal strength exists to take advantage of external opportunities (Hunger & Wheelen (2011). Based on the SWOT analysis results, the authors figure out several strategies that need to improve the development of sport tourism in Mongolia. Strategies are as follows:

(1) Reinforcing the government supports: the apparent experience of countries with better tourism development is that the central government attaches importance to and supports the tourism industry, especially in infrastructure construction, overseas marketing, etc., which requires the high involvement of the national government. The local government must preserve the environment for sustainability, considering impacts caused by horses on soils and vegetation (Newsome et al., 2020). Making a regulation and standardized by government involvement in horse-riding tourism operations and sector following clear route and service will be increased. Local governments must also focus on transportation that provides access to neighboring destinations, and increasing in accommodation

capacity, quantity, and quality of hotel facilities, hygiene, and cleaning of tourist services is essential, and price controlling of the different tourist services.

(2) Promoting the unique Mongolian cultures, including horse, nomadic and Mongolian traditions in the target markets and increasing the horse-related festival or activities, to settle annual national and international events in the national event calendar, such as the Mongolian Naadam and 1,000 Eagle festival. Eventually will increase the number of domestic and international tourists. Making horse-riding tourism base and outdoor and adventure educational identity in Mongolia.

(3) Reinforcing the professional competencies by training the horse-riding tourism industry-related practitioners as well as attract and retain existing staff. It will increase the professional human power resources to engage in the Mongolian horse-riding tourism industry, to meet the customers' needs. Improving horse-riding-related risk management, which is a service safety guarantee to the customers. Besides, using the latest technology to present the road conditions and road structure before embarking on a ride, and indicate where the hazardous situations may occur.

(4) Taking the chance of COVID-19 pandemic to improve the horse-riding tourism service qualities conditions to increase the marketability in Mongolia.

V. Conclusion

Mongolia has considerable number of horses as well as varied unique environmental features and culture to develop horse-riding tourism. On the other hand, currently there are various of conditions still underdeveloped, such as infrastructure, hospitality supplies and professional competencies of human resources in horse riding tourism. Nevertheless, the entire situation has been analyzed by the author of this study through SWOT analytic tool. The evidence indicates that the current situation is located in the first quadrant as aggressive SO strategy, which means the situation can be improved by using internal strength exists to take advantage of external opportunities. Therefore, in order to develop the horse-riding tourism industry in Mongolia, the Mongolia government needs to work with academic scholars, practitioners, and the community in the future.

VI. Suggestions

For the practical suggestions from the authors of this study to the horse-riding tourism development in Mongolia are as follows:

1. Improving the quality of infrastructure that supports tourism, such as access to roads, transportation, and sufficient accommodation facilities.
2. Increasing horse-riding tourism national/international events.
3. Improving safety of horse-riding tourists.
4. Developing various values of tourist attraction of horse- related tourism products.
5. Developing various of horse-riding trails such as important scenic spots for the horse-riding trails and the surrounding scenic belts of city.
6. Improving the professional competencies of in the industry-related practitioners.

Besides, future research could be explored, such as:

1) The determining the horse-riding tourism market size include the maximum number of horses, professional horse-riding tour guides, trails, and the other servicing conditions that can provide the riding services for tourists, as well as the cap of visitors' amounts are ready for being received of horse-riding touring companies in Mongolia.
2) The customers' satisfaction to the service qualities provided by the employees of the horse-riding touring companies in Mongolia.
3) The economic relations among various industries related to the horse-riding tourism in the State of Mongolia.

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The Relationship Between Sports Participation and Civic Engagement in Japan

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Sports participation during adolescence may lead to various benefits related to education. In particular, examining civic engagement among the qualities and skills deemed to constitute superior education is imperative. In this regard, a few studies focused on the relationship between sports participation in a sports team during adolescence and civic engagement.

However, studies investigating the impact of the types of sports participation at the school level on civic engagement are lacking. Therefore, the current study aims to elucidate the relationship between sports participation during adolescence and civic engagement. A questionnaire survey was conducted in December 2018. Using a sample size of 1,232, the study performed exploratory factor analysis, t-tests, and one-way ANOVA. The results revealed that individuals belonging to a sports team during adolescence tended to exhibit high levels of civic engagement. Furthermore, those belonging to a sports team from elementary school to university exhibited higher levels of civic engagement than those belonging to sports teams for shorter periods did. Furthermore, the results revealed that diverse sports participation, that is, participation in multiple sports teams and various events tended to exert a positive effect on civic engagement. These results indicate that diverse sports participation might exert a positive impact on civic engagement.

Keywords: sports participation, sport rights, educational results, diversity

Introduction

Involvement in sports during adolescence may lead to various educational results. Enhanced self-efficacy and life skills are associated with good educational results (UNESCO, 2015). A number of countries are developing sports opportunities for their youth so as to enhance their education. Similarly, in Japan, the generation of sports opportunities so as to improve educational results has become an important sports policy. Specifically, Japan Sports Agency (2018) developed an effective and efficient management system for exercise activities. In addition, the Japan Sport Association (2018), which is primarily responsible for promoting Japanese amateur sports, planned to strengthen collaboration between regional sports clubs and extracurricular sports activities. In so doing, the organization purposed to enhance educational results through sports. Accordingly, the maintenance and expansion of sports environments that have a positive influence on youth

have become imperative.

However, it is not guaranteed that involvement in sports during adolescence leads to positive educational results. Rather, it may have a negative effect on some individuals. Research has revealed that belonging to a sports team in which winning is pursued may promote non-ethical behavior and lead to the formation of violent attitudes (Fraser-Thomas et al., 2005; Newman et al., 2021). Therefore, when exploring the association between sports involvement and educational results, it is crucial to acquire knowledge from a practical perspective. In particular, it is imperative to examine civic engagement among the qualities and skills regarded as constituting superior education. This may contribute to finding solutions to serious problems in society (Theiss-Morse & Hibbing, 2005; Chan & Mak, 2020). Therefore, it is of paramount importance to explore sports involvement during adolescence in relation to civic engagement.

Literature Review

A plethora of research has been conducted on sports involvement during adolescence and educational results. Such studies, which have been referred to as Positive Youth Development through Sport, have emphasized ensuring adolescents become human resources needed for society through sports (Holt & Neely, 2011). Accordingly, these studies have examined the effect of sports involvement during adolescence on variables such as life skills and civic engagement (Coakley, 2011).

Specifically, studies have examined whether and why sports involvement has a positive impact on civic engagement (Balsano, 2005; Brady et al., 2020). By employing developmental theory, Robertson et al. (2019) revealed individuals who belong to sports teams participate in the process of determining the goals and leaders of the group. Thus, because they learn to play a role in the community, their civic engagement increases. In addition, Perks and Haan (2011) and Seippel (2005) noted from the perspective of social capital theory that the youth's involvement in sports has a positive effect on civic engagement. Specifically, activities in which many individuals and sports teams are involved promote the internalization of members' norms. Moreover, their contribution to the construction of a network with team members enhances civic engagement. On the contrary, empirical studies on the relationship between sports involvement during adolescence and civic engagement have shed light on the effect sports teams have on civic engagement (Lopez & Moore, 2007; Perks, 2007). By employing a cross-sectional questionnaire survey, which 12,377 Canadians between 25 and 65 years of age completed, Perks and Haan (2011) revealed that affiliation to a sports team during children's formative years until junior high school had a positive impact on civic engagement. Rotolo et al. (2020) administered a cross-examination questionnaire to third graders in 1988 and to the same sample in 2000. They revealed after controlling socioeconomic factors such as parents' academic expectations, affiliation to a sports team in high school had a positive impact on civic engagement.

McFarland and Thomas (2001) administered five long-profile questionnaires to 10,827

second graders in junior high school in 1988. The participants completed the survey again in 2000. The results revealed that affiliation to tennis and basketball teams did not have a positive impact on civic engagement. It was also found that cheerleading had a negative impact on civic engagement. It appears this negative impact may be linked to interactions among homogeneous members.

As noted previously, research has revealed that affiliation to sports teams when young is a learning opportunity to enhance civic engagement so as to promote the acquisition of social capital. In other words, previous studies have mainly focused on the relationship between civic engagement during each school stage and belonging to sports teams. However, scholars have proposed various perspectives, such as the number of sports events and individual goal-setting, on sports participation apart from affiliation with sports teams. The relationship between these perspectives on sports participation for each school stage and civic engagement lacks analysis and requires further examination.

Furthermore, no such studies have focused on a Japanese population. The sports environment in Japan varies from that of other countries (Nakazawa, 2011). For example, most junior high and high school students who join sports teams participate in extracurricular sports activities. Teachers who coach these activities aim to achieve good results at competitions (Fukami & Okazawa, 2016). In addition, a majority of students do not change their sports every season but play the same sport for several years. Therefore, in such a sports environment in Japan, elucidating whether continued sports participation among the youth is related to civic engagement is necessary. An analysis of sports involvement and civic engagement in a Japanese sports environment will enable one to examine the sports environment system.

Purpose of Study

The study aims to examine the sports environment and system for Japanese youth by shedding light on the relationship between sports participation and civic engagement. The study seeks to answer for the following research questions:

(1) What factors comprise civic engagement?
(2) What is the relationship between the duration of sports participation and civic engagement?
(3) Participation in which types of sports teams at each school level is associated with civic engagement?
(4) How many sports events at each school level are associated with civic engagement?
(5) Which individual goal-setting at each school level is related to civic engagement?

Method

A questionnaire survey for Japanese people was conducted.

Participants

We conducted a questionnaire survey through a web survey company in Tokyo in December, 2018. The survey was conducted on 1,546 survey panels held by the company. The respondents were required to be between the ages of 30 and 50 years and live in Tokyo.

After excluding those questionnaires with errors, 1,232 (79.6% valid response rate) were analyzed. The characteristics of the sample are presented in Table 1.

Table 1. ***Demographic Information of Participants (Gender, Age, and Occupation)***

Gender	Male	645 (51.4%)
	Female	587 (48.6%)
Age	30s	401 (32.7%)
	40s	436 (35.5%)
	50s	395 (31.8%)
Occupation	Full-time job	877 (71.2%)
	Part-time job	74 (6.0%)
	others	281 (22.8%)

Measures

The questionnaire included demographic information such as gender, age, and occupation, as well as questions on civic engagement and sports participation.

Although the concept of civic engagement has been developed from diverse academic areas such as developmental psychology and social psychology, it does not have a unified definition. Many studies have included membership and participation in local organizations when defining the concept (Zaff et al., 2011; Lenzi et al., 2012). However, civic engagement has been characterized by personal attitudes and behavior in the community. In relation to attitudes in civic engagement, research has placed emphasis on a sense of duty and norms to fulfill individuals' roles in the community (Youniss et al., 1997). With regard to behavioral aspects, civic participation, namely, active action in a community such as performing volunteer activities has been emphasized (Zaff et al., 2008). Accordingly, in this study, in accordance with Denson and Bowman (2013), we deemed civic engagement comprised civic duty and civic participation. The questionnaire included five questions on each of these factors (a five-point Likert-type scale: 1: Strongly disagree to 5: Strongly agree).

Sports participation can be viewed from several perspectives. Specifically, the current study examines three perspectives, namely, type of sports team, number of sports events, and individual goal-setting. Previous studies have demonstrated that these aspects influence educational outcomes, such as life skills (Takemura, 2007; Eime et al., 2013; Hayashida & Shimizu, 2021, Ishihara et al., 2020).

Types of sports team included extracurricular sports activities, school sports clubs, regional sports clubs, sports clubs operated by private companies, teams operated by professional teams, and non-participation. A multiple choice format was used to answer this question. Participants were required to indicate how many events they participated in, ranging from one to five or more. Furthermore, they were required to select one of the following individual goal-setting options: victory-oriented, interaction-oriented, fun-oriented, health-oriented, and others.

Analysis

First, after confirming the ceiling effect and floor effect to shed light on the civic engagement structure, exploratory factor analysis (main factor method, promax rotation) was performed. An eigenvalue of 1 or more was set as a determination criterion for the factor number. When the factor load of an item was less than 0.4, the item was excluded and factor analysis was performed again. Subsequently, the duration of sports participation was regarded as the independent variable and the factor score of civic engagement as the dependent variable. Thereafter, one-way analysis of variance (one-way ANOVA) was performed to clarify the duration of sports participation and its relationship with civic engagement. One-way ANOVA was also performed to determine the relationship between sports participation for each school stage. SPSS 27.0 was employed for the analysis.

Results

Components of Civic Engagement

The results revealed a remarkable floor effect in the items related to *role of community leaders* (M: 1.72, SD: 0.95). Therefore, exploratory factor analysis (main factor method, promax rotation) was performed by employing nine items, excluding this item. Two factors were extracted, which accounted for 53.07% of the variance. Cronbach's alphas ranged between .81 and .83.

The constraint dimensions were defined so as to clarify what civic engagement is. The first factor was named *civic participation* and included items related to involvement in one's community. The second factor was named *civic duty* and encompassed an awareness and obligation of those who lived in an area to it. This finding concurs with Zaff et al. (2008) and Youniss et al. (1997) and supports Denson and Bowman's (2013) civic engagement structure.

While the average value of the four items included in civic participation ranged between 1.9 and 2.6, the five items involved in civic duty ranged between 3.2 and 3.9. Thus, in comparison to civic participation, the average value for each item of civic duty tended to be high. This result suggests that there is a gap between attitude and behavior in that the participants' attitudes were not transferred to their contribution to the community. The results of the exploratory factor analysis are displayed in Table 2.

Table 2. ***Results of Exploratory Factor Analysis***

Factors	Items	Factor Loadings		M	S.D.
		F1	F2		
civic participation	1 Helping to improve my community and society	**0.87**	0.33	2.30	1.03
	2 Mentoring people who live in my community and society	**0.82**	0.20	1.90	0.96
	3 Volunteer（e.g., Social welfare volunteer）	**0.78**	0.33	1.98	1.04
	4 Helping people in need or with disabilities	**0.52**	0.37	2.62	1.04
civic duty	5 It is important for me to contribute to my community and society	0.44	**0.80**	3.23	0.82
	6 It is important to be interested in problem about my community and society	0.37	**0.78**	3.45	0.84
	7 It is important to help make the world a better place to live in	0.31	**0.73**	3.65	0.83
	8 It is important to help other people	0.11	**0.61**	3.95	0.70
	9 It is important to help make sure all people are treated fairly	0.13	**0.47**	3.72	0.87
Eigen value		3.26	1.51		
Variance explained in % (53.07)		36.248	16.82		
Cronbach's Alpha		0.83	0.81		

Duration of Sports Participation and Civic Engagement

The relationship between the duration of sports participation and civic engagement was analyzed. While those who had not participated in a sports team from elementary school to university were classified as *non-participation,* those who participated in a sports team from elementary school to junior high school, elementary school to high school, and elementary school to university were classified as *short-term, middle-term,* and *long-term,* respectively. These factors were the independent variable and the civic engagement score was the dependent variable.

The results of the analysis revealed significant differences observed in both civic duty and civic participation. Multiple comparisons by employing the Tukey method demonstrated that those in the non-participation group (−0.38 and −0.50 for civic duty and participation, respectively) had significantly lower civic duty than the other groups. Furthermore, the participants in the short-term and middle-term had significantly higher average values for civic participation than those in the non-participation group. In this regard, those in the long-term group had higher average values than the participants in the short-term and middle-term groups (Table 3).

Table 3. ***One-Way ANOVA Results (Duration of Sports Participation)***

Factors	①non - Participation		②short-term		③middle-term		④long-term		F value	Multiple Comparison
	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
civic duty	-0.38	0.91	0.03	0.78	-0.05	0.89	0.14	0.95	14.0^{***}	① < ②, ③, ④
civic participation	-0.50	0.76	-0.12	0.81	-0.01	0.86	0.34	1.03	36.86^{***}	① < ②, ③ < ④

Note: $^{*}p$ <.05, $^{***}p$ <.001

Type of Sports Team Participation at Each School Level and Civic Engagement

In order to consider the relationship between the type of sports team and civic engagement, sports teams at each school level was the independent variable and the factor score of civic engagement the dependent variable. With regard to sports teams, while those who belonged only to extracurricular sports activities were classified as *extracurricular sports activities*, those who belonged to sports teams other than extracurricular sports activities, such as regional sports clubs were classified as *other sports team*. In addition, those who belonged to both extracurricular sports activities and other sports team were categorized as *multiple sports teams*. With the exception of differences in civic participation in elementary school and civic duty in high school, significant differences emerged from the analysis. Thereafter, multiple comparisons by employing the Tukey method were performed. The results are noted below.

Significant differences were found in civic duty at the elementary school level (extracurricular sports activities M: −0.03, other sports team M: 0.03, and multiple sports teams M: 0.24). Significant differences were also found at the junior high school level in civic duty (extracurricular sports activities M: 0.05, other sports team M: −0.07, and multiple sports teams M: 0.39) and civic participation (extracurricular sports activities M: 0.01, other sports team M: 0.36, and multiple sports teams M: 0.59). Significant differences were found at the high school only in civic participation (extracurricular sports activities M: 0.06, other sports team M: 0.74, and multiple sports teams M: 0.65). Significant differences were identified at the university level for both civic duty (extracurricular sports activities M: 0.01, other sports team M: 0.14, and multiple sports teams M: 0.65) and civic participation (extracurricular sports activities M: 0.23, other sports team M: 0.15, and multiple sports teams M: 1.01). The results revealed that the average value of civic duty and civic participation was high during all the school stages, whereas the values tended to be lower for the extracurricular group than those for other groups (Table 4).

Table 4. ***One-Way ANOVA Results (Type of Sports Team)***

	Factors	①extracurricular sports activities		②other sports team		③multiple sports teams		F value	Multiple Comparison
		Mean	SD	Mean	SD	Mean	SD		
elementary school	civic duty	−0.03	0.91	0.03	0.88	0.24	0.90	8.53 ***	①, ② < ③
	civic participation	0.07	0.92	0.07	0.96	0.19	0.99	1.65	
junior high school	civic duty	0.05	0.90	−0.07	1.03	0.39	0.87	5.62 **	①, ② < ③
	civic participation	0.01	0.90	0.36	1.07	0.59	1.07	17.36 ***	① < ②, ③
high school	civic duty	0.07	0.91	−0.01	1.09	0.38	0.90	2.45	
	civic participation	0.06	0.93	0.74	0.92	0.65	0.99	21.89 ***	① < ②, ③
university	civic duty	0.01	1.01	0.14	0.85	0.65	0.93	6.14 **	①, ② < ③
	civic participation	0.23	1.00	0.15	0.96	1.01	1.08	9.73 ***	①, ② < ③

Note: $^{**}p<.01$, $^{***}p<.001$

Number of Sports Events at Each School Level and Civic Engagement

We examined the relationship between number of sports events and civic engagement for each school stage. While those who only participated in one sport were classified as *single,* those who participated in more than one sport were classified as *multiple.* Subsequently, a comparison of factor scores of civic engagement in each group was performed (T-test).

The results revealed the average values for civic duty computed for multiple groups tended to be significantly higher than those calculated for singular groups at the high school stage (single M: 0.06, multiple M: 0.43). Analyses of civic participation revealed the following results. Significant differences were found in civic participation at the elementary school level (single M: 0.03, multiple M: 0.29), the junior high school level (single M: 0.02, multiple M: 0.59), the high school level (single M: 0.11, multiple M: 1.00), and the university level (single M: 0.14, multiple M: 0.68). Once again, the average values of multiple groups tended to be higher than those calculated for a single group (Table 5).

Table 5. ***T-Test Results (Number of Sports Events)***

Factors		①single		②Multiple		t balue
		Mean	SD	Mean	SD	
elementary school	civic duty	0.04	0.86	0.12	1.01	−1.28
	civic participation	0.03	0.90	0.29	1.05	−3.71***
junior high school	civic duty	0.04	0.88	0.15	1.07	−1.11
	civic participation	0.02	0.90	0.59	1.11	−5.90***
high school	civic duty	0.06	0.91	0.43	1.15	−2.93*
	civic participation	0.11	0.93	1.00	1.14	−5.78***
university	civic duty	0.10	0.89	0.24	1.12	−1.07
	civic participation	0.14	0.94	0.68	1.21	−3.96***

Note: *p<.05, ***p<.001

Individual Goal-Setting at Each School Level and Civic Engagement

We examined the relationship between individual goal-setting and civic engagement for each school stage. The goals were the independent variable and the factor score of civic engagement the dependent variable. No significant difference was observed during all the school stages for civic duty. On the contrary, a significant difference was observed in universities for civic participation. Thereafter, the results of multiplex comparison by employing the Tukey method revealed the average value of health-oriented goals tended to be high in comparison to interaction-oriented goals (Victory-oriented M: 0.31, Interaction-oriented M: 0.18, Fun-oriented M: 0.12, Health-oriented M: 0.50) . The results are presented in Table 6.

Table 6. ***One-Way ANOVA Results (Individual Goal-Setting)***

Factors		①Victory-oriented		②Interaction-oriented		③Fun-oriented		④Health-oriented		F value	Multiple Comparison
		Mean	SD	Mean	SD	Mean	SD	Mean	SD		
elementary school	civic duty	−0.07	0.99	0.08	0.86	0.05	0.93	0.08	0.84	0.04	
	civic participation	0.13	0.99	0.09	0.90	0.16	0.97	0.09	0.94	0.81	
junior high school	civic duty	0.06	0.97	−0.09	0.93	0.01	0.78	0.07	0.83	0.30	
	civic participation	0.03	0.97	0.09	1.07	0.91	0.91	0.20	0.95	0.20	
high school	civic duty	0.15	1.01	0.00	0.98	0.13	0.92	0.01	0.87	2.45	
	civic participation	0.13	0.93	0.03	0.87	0.32	1.03	0.39	0.99	0.00	
university	civic duty	0.22	1.07	0.08	1.03	0.12	0.81	0.02	0.89	1.11	
	civic participation	0.31	1.00	0.18	0.96	0.12	0.98	0.50	0.91	3.14 *	③＜④

Note: $^{*}p<.05$

Discussion

The analysis revealed that those who participated in sports team at a young age exhibited a high tendency toward civic engagement in comparison to those who did not participate. These results concur with Perks and Haan (2011) and Rotolo et al. (2020). The results suggest that the various experiences undergone in the process of sports participation may increase civic engagement. The daily activities of a sports team may render relationships with others essential for its members and play a role in team operation. Such division of roles within the group and collaboration with others may increase civic engagement.

The study assumes that civic engagement increases with an increase in the duration of sports participation. However, the study found that a longer duration of sports participation does not necessarily increase civic engagement. The results demonstrated that individuals with continued participation in sports from elementary school to university displayed higher levels of civic engagement than those of other groups did. However, civic engagement remained the same for the other groups. This finding may be explained by the differences found in team operation methods in the various stages of education. In Japan, sports teams in all levels of schools focus primarily on extracurricular sports activities. In daily activities, teachers are often responsible for the setting and operation of the team. On the contrary, university sports teams focus on extracurricular sports activities and sports clubs, which students organize (Kuramoto & Kikuchi, 2006). Therefore, one may assume that individuals who belong to university sports teams are afforded learning experiences that are related to the autonomy of the group, which enhances their civic engagement. On the contrary, those who belong to sports teams from elementary school to high school do not experience collective autonomy.

In addition, the results of sports participation for each school stage and civic engagement revealed that those who belonged to multiple sports teams and/or were involved in various events had high civic engagement. The result demonstrated that diverse sports participation, which implies participating in a number of events and/or in multiple sports teams, has a positive impact on civic engagement. Gurin et al. (2002) noted that the experience of cooperating with individuals with different values affords individuals

opportunities to accept diversity and enhance civic engagement. According to Gurin et al. (2002), belonging to diverse teams and experiencing various sports can increase civic engagement because it leads to increased interaction with people who hold different values.

However, individual goal-setting was seemingly unrelated to civic engagement at any school stage. In educational psychology and based on self-determination theory and achievement goal theory, the finding clearly indicates that importance should be given not only to the content of goals but also to the method of goal-setting and the achievement process to promote growth in children (Umezaki, 2020). In the context of sports participation, a possibility exists that civic engagement is enhanced by how the individual has established the purpose of the sport rather than what the purpose of the sport is. This finding suggests that civic engagement does not change according to one's goals. However, Nakazawa (2011) revealed that many of the sports team coaches achieve good educational results in the process of winning competitions. Individuals who are not victory-oriented may cease participating in extracurricular sports activities (Zhou & Kataoka, 1995; Shimizu, 2017). Therefore, it is important to develop a system in which students with various goals will want to participate in extracurricular sports activities.

Conclusion

The purpose of this study was to clarify the relationship between sports participation during adolescence and civic engagement. The results revealed that those who belonged to a sports team during adolescence tended to exhibit high civic engagement in comparison to those who did not belong to a sports team. Furthermore, those who had belonged to a sports team continuously from elementary school until university exhibited higher civic engagement than those who had belonged to sports teams for shorter periods. The results further revealed that diverse sports participation, that is, participation in multiple sports teams and/or various events, tended to have a positive effect on civic engagement. However, there was no association between goal-setting and civic engagement.

Limitations of the Study and Directions for Future Research

The academic value of this study lies in its focus on civic engagement as an educational outcome and the effectiveness of belonging to multiple sports teams and engaging in various sports events. Based on these results, the study proposes that sports organizations need to actively create an environment where the youth can belong to various sports teams and play multiple sports. For example, alliances can be formed among sports organizations to enable the youth to participate in various sports teams or for single sports teams to engage in multiple sports.

However, this study has three limitations. First, since the cross-sectional questionnaire survey was employed, the causal relationship thereof could not be ascertained. Therefore, it is recommended that causality be ascertained by implementing a longitudinal questionnaire survey over a number of years and analyzing data by employing a cross-delay effect model or similar. In doing so, it is also necessary to examine the variables that mediate sports participation and civic engagement. Second, we analyzed the relationship between the three

abovementioned perspectives of sports participation during adolescence and civic engagement. Hence, we were unable to analyze the negative effects of sports participation or to ascertain the impact of sports participation on educational outcomes other than civic engagement. Future analyses should include the negative impact of sports participation by utilizing diverse perspectives to apprehend sports participation and its outcomes. Third, we assumed that civic engagement is demonstrated in general society and the community. However, it is recommended that civic engagement should be examined in a sports team and comparisons thereof made with that exhibited in society.

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