Analysis of Structure-Conduct-Performance Pattern in The Competition of Digital Platforms in Sports Goods Market

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ABSTRACT

The main focus of this research is to analyze the structure-conduct-performance model in the competition of digital platforms in the sports goods market. This study is applied and descriptive in nature, utilizing a qualitative method based on thematic analysis to investigate the subject. The statistical population consists of experts in the fields of sports industry, human resources, and technology. Sampling was conducted using purposive and snowball techniques. Semi-structured interviews were continued until theoretical saturation was achieved; after the 12th, 13th, 14th, and 15th interviews, it was determined that no new information was being obtained and the interviews had become repetitive, thus the data collection process was concluded. MAXQDA software was employed for data analysis. The results showed that competition in digital platforms in the sports goods market includes 5 main themes, 16 sub-themes, and 45 selective concepts within the SCP model. The most important components are: value creation, Market Forces, Platform Design and Governance, Value Management and Optimization , and Platform Competitiveness Capacity. These factors are divided into three categories: factors with a positive impact, factors with a negative impact on the success and sustainability of digital platforms in competition, and factors with ambiguous effects. The analysis of the SCP model in the competition of digital platforms has extensive impacts on the sports goods market. This study provides a conceptual framework based on the SCP paradigm, which acts as a logical and systematic guide for the empirical examination of digital platform companies' performance. This study helps managers focus on parameters that assist them in adapting to uncertainties and coping with future shocks that may negatively affect their success, sustainability, and growth. Managers do this by assessing their company's position in the market and adjusting their strategies, including analyzing entry and exit barriers and understanding the effects of regulatory policies.

Keywords: SCP pattern, sports goods market, digital platform, technology, artificial intelligence

1. Introduction

The internet's growth and advancements in Artificial intelligence (AI) have transitioned many economic activities from traditional to digital platform markets (Cennamo, 2021). According to the "Digital 2021: Global Overview" report, increased online activities like classes and meetings led to a rise in global internet penetration by 316 million people last year, reaching 59.5% (Kemp, 2020). In this competitive digital landscape, the competitive advantage of digital platform markets is significantly influenced by existing competition (Hanelt et al., 2021). Therefore, understanding the nature of competition in digital platforms and the factors that influence it is crucial.

Platform-based businesses, such as media, marketplaces, video games, and credit cards, are crucial to modern economies (Parker & Van Alstyne, 2005; Zhu et al., 2021). Their significance has grown with the rise of digital giants like Google, Amazon, and Apple, which have created digital platform-based ecosystems. These ecosystems encourage third-party innovations, leading to networks of interdependent companies (Ceccagnoli et al., 2012; Gawer & Cusumano, 2008; Parida et al., 2019). In the online space, existing companies face intense competition from new digital platforms, requiring the development of complements and strategic dependencies (Adner & Kapoor, 2010; Cusumano et al., 2019). This often results in the competitive position of complements being weaker compared to the platform owner who controls the ecosystem (Gawer & Cusumano, 2002). Examples include Apple's influence over app developers (Yoffie & Rossano, 2012) and Amazon's dominance over its complements (Aversa et al., 2020; Zhu & Liu, 2018).

Digital transformation is revolutionizing business planning and operations across all sectors. This shift requires a reassessment of not only technology but also customer interactions and operational management. Key digital technologies such as big data analytics, artificial intelligence, and cloud computing have become essential for strategic decision-making. These technologies enable companies to deliver personalized experiences and extract valuable insights from data (Purcărea & Purcărea, 2017; Sarker, 2021).

Global events like the COVID-19 pandemic have hastened the advancement of digital platforms and heightened the necessity to reevaluate and restructure operational models. Remote work, e-commerce, and digital communications have become more widely accepted, showcasing a new business paradigm that underscores the importance of flexibility and adaptability (Nanda et al., 2021).

These transformations influence the economic and social landscape, molding the future of work, consumer behavior, and global market dynamics. To stay sustainable and relevant in the digital era, businesses must adapt to and anticipate these changes. (Brenner, 2018).

The sporting goods industry is also experiencing these changes. The global sports market is valued at around 471 billion USD, with the United States holding a 32.5% share (Statista, 2021). In 2019, the European Union's exports and imports of sporting goods surpassed 23.5 billion euros (Eurostat, 2020). Research shows that the sporting goods industry is vital for athletes and sports enthusiasts, but the main future challenges for stakeholders in this sector remain uncertain (Lestan & Kabiraj, 2021).

Online consumers exhibit different behaviors and decision-making processes compared to in-store shoppers. The online market offers numerous opportunities for sporting goods retailers to reach diverse customer segments. As digital technology becomes increasingly integral to daily life, stakeholders in the sporting goods industry must recognize its significance for future growth (Kabiraj & Lestan, 2020). Research indicates that women often have a weaker link between their intentions and desires, necessitating distinct marketing strategies by online retailers to persuade women and mitigate their perceived risks (Chiu et al., 2018). The variety of clothing is crucial for women, who often purchase athleisure wear for its versatility and comfort. This demand trend is expected to be driven by women in the coming years (McKinsey & Company, 2021).

Women constitute a significant segment of the sportswear and athleisure market, and their purchasing behavior plays a crucial role in shaping market demand trends. Research indicates that women often experience a weaker link between purchase intentions and final purchasing decisions, which necessitates distinct marketing strategies and risk-reduction measures from online retailers (Hanlon & Spaaij, 2017). These behavioral patterns influence digital platform conduct, compelling them to adapt their product assortments, marketing strategies, and service offerings to align with women's preferences and perceptions of risk (Sin et al., 2024). Thus, gender-specific consumer behavior plays an essential role in shaping both firm conduct and market performance, emphasizing the

need for integrating these dynamics into a comprehensive SCP-based analysis. Consequently, addressing gender dimensions—especially women's consumption behavior—enhances the understanding of market structure, competitive strategies, and the overall performance outcomes in terms of market efficiency and consumer welfare (tanrıkulu, 2024).

This study uses the Structure-Conduct-Performance (SCP) framework to identify factors influencing the sustainability of companies in digital platform competition, defined as their continued presence as a viable means of interaction and transaction (McIntyre et al., 2021). The SCP framework has been widely used in management literature to explore competitive market structures, industry dynamics, and strategic changes (Feigenbaum & Thomas, 1995). It examines intra-industry differences in competitive behavior and company performance (Nair & Kotha, 2001) and has been applied to analyze profitability differences, switching barriers, and competitive positioning (Feigenbaum & Thomas, 1990; Ferguson et al., 2000; McNamara et al., 2002). However, few studies have adapted the SCP framework to digital platform markets, leaving a gap in comprehensive theoretical analysis of factors influencing success in these markets.

2. Theoretical Background

Recent digital transformations have highlighted the need to converge two main streams of literature. The first stream examines how existing companies adapt to technological changes (Anderson & Tushman, 1990; Cozzolino et al., 2018; Henderson & Clark, 1990). The second stream focuses on the strategies and business models of platform-based organizations (Aversa et al., 2020; Gawer & Cusumano, 2014; Jacobides et al., 2018; Parida et al., 2019). These research traditions stem from different theoretical perspectives. Adaptation studies focus on organizational capabilities, managerial cognition, and strategic alliances (Pisano, 1990; Teece et al., 1997; Tripsas & Gavetti, 2000). Platform studies are rooted in network economics (Rochet & Tirole, 2003), information systems (Huber et al., 2017; Tiwana et al., 2010), strategy (Cennamo & Santalo, 2013; Parida et al., 2019), and innovation (Boudreau, 2010; Nucciarelli et al., 2017).

Given the objective of this study—to analyze the structure-conduct-performance (SCP) pattern in the competition among digital platforms in the sports goods market—the application of the SCP framework is both scientifically justified and practically relevant. The SCP framework, originally developed by (Bain, 1951), examines how market structure influences firm behavior and ultimately impacts industry performance. Although initially designed for analyzing traditional manufacturing industries, the fundamental principles of the SCP framework remain applicable to digital markets (Bourai S et al., 2024). The digital platforms market for sports goods is characterized by features such as network effects, switching costs, economies of scale, and market concentration, all of which are critical elements in analyzing market structure. In turn, this structure shapes the competitive behaviors of platforms, including strategies for user acquisition, dynamic pricing, technological innovation, and the expansion of complementary services. These behaviors directly affect market performance in terms of efficiency, competition level, final product pricing, and consumer welfare (Zhou & Xiong, 2024). Moreover, the SCP framework allows for an analysis of the role of public policies, such as competition regulations, antitrust measures, and consumer protection policies, which have gained increased significance in digital markets dominated by major platforms (Bourai et al., 2024). Therefore, the SCP framework is employed in this study as an appropriate analytical tool to provide a deeper understanding of how the structure of the digital platforms market is formed, how competitive behaviors evolve, and what performance outcomes emerge in the context of the sports goods industry.

in industrial organization economics, the SCP framework posits that companies gain competitive advantages by responding to industry characteristics (Bain, 1956; Mason, 1939; Skeoch, 2014). Companies adopt strategies based on market conditions to improve profitability (Bettis, 1981; Weiss, 1979). The SCP framework's dual focus on industry-level and firm-level factors affecting performance is significant (Panagiotou, 2006). (Porter, 1979; Porter, 1980; Porter, 1991) argues that industry composition impacts companies' survival decisions and that strategy is influenced by industry dynamics, aligning internal strengths with external opportunities (Grant, 1999).

Understanding the target market is crucial for crafting effective strategies (Lawrence & Lorsch, 1967; McKone-Sweet & Lee, 2009). This understanding helps outline objectives and necessary steps (Gibson et al., 2005; Stank et al., 2005). leading to planned actions that guide company behavior (Day, 1999).

Formulating company strategy requires considering both internal and external environments and various organizational levels (Sadraoui & Mchirgui, 2014). External factors may indicate that action alone is insufficient, as companies often lack the necessary resources and capabilities to compete effectively (Ellram et al., 2008; Leuschner et al., 2013). Thus, creating a differential advantage by maximizing value for end consumers may require multi-company collaboration (Jap, 1999, 2001). Processes and operations can benefit from a strategic framework that enhances interdepartmental and interorganizational integration (Bowersox et al., 1999). Strategic integration with partners can lead to coordinated actions aligning multiple companies' processes (Flynn et al., 2010; Porter, 1980).

The SCP framework can enhance the literature on digital platform companies by introducing identified variables, making it more accessible and dynamic for managers to formulate and implement strategies in a rapidly changing environment (Marion, 1976).

While existing research has examined the factors influencing competition in digital markets, significant gaps remain in analyzing competition within the sporting goods market, which require greater attention. Specifically, insufficient focus on the unique characteristics of the sporting goods industry, such as consumer behavior, gender-based demand, and the dynamics of the digital market in this sector, has been evident in past studies. Furthermore, the adaptation of the SCP framework to the features of digital platforms in the sporting goods industry has not been comprehensively explored. This study aims to address these gaps by identifying the factors influencing competition and the success of digital platforms in the sporting goods market, providing a reliable theoretical and practical analysis that will contribute both to the enrichment of the academic literature and to the provision of actionable tools for managerial decision-making.

Research Questions:

1. What are the factors influencing the market structure of digital platforms for sporting goods?

2. What role do network effects and complementary products play in the competition of digital platforms?

3. What competitive behaviors do digital platforms exhibit in the fields of technology and marketing?

4. What organizational characteristics contribute to the success of digital platforms?

5. What are the key factors affecting the performance of digital platforms in the sporting goods market?

This research utilizes qualitative interviews with experts in the fields of sports industry, human resources, and technology to analyze the SCP (Structure-Conduct-Performance) model in the competition of digital platforms in the sporting goods market. The primary objective of this study is to analyze the structural, behavioral, and performance dimensions of competition in digital platforms for the sporting goods market based on the SCP model.

3. Methods and Materials

This research is applied in terms of its results and descriptive in terms of its purpose. Considering the nature of the topic and the research goal, a qualitative method of thematic analysis was chosen. The study's population includes experts in the fields of sports industry, human resources, and technology. The selection criteria included a minimum of five years of relevant professional experience, a valid academic degree, and practical experience in projects related to digital platforms or sports goods markets. The choice of these three specialized fields was due to their complementary roles in analyzing structural, behavioral, and performance dimensions of competition within digital platforms: sports industry experts explained market structure and consumer behavior; human resources experts focused on managerial and organizational aspects; and technology experts provided technical analysis and innovative advantages of the platforms. The sampling method was purposive and snowball sampling. Semi-structured interviews were conducted with validation from experts in the field, and continued until theoretical saturation was reached. From the 12th interview onward, no new insights emerged, but to ensure data sufficiency, 3 additional interviews were conducted, leading to a total of 15 interviews. MAXQDA software was utilized for the research.

In this research, the interviewees in the field of digital platforms for the sports goods market are presented in Table 1 as follows.

Table 1

Profile of the Interviewees

Code	Education	Current Position	Area of Expertise	Relevant Industry	Years of Experience
P_1	Bachelor's	Chief Technology Officer	Technology	Sports Technology	6
P_2	PhD	Data Specialist	Digital Platform	Sports Industry	7
P_3	Master's	HR Manager	Sports Management	Sports Industry	6
P_4	Master's	HR Manager	Human Resources	Sports Business	8
P_5	PhD	Faculty Member	Sports Management	Sports Industry	10
P_6	PhD	Marketing Supervisor	Sports Marketing	Sports Goods	15
P_7	PhD	Faculty Member	Sports Business	Sports Analytics	12
P_8	Master's	Senior Manager	Sports Economics	Sports Technology	5
P_9	Bachelor's	Strategy Manager	Business Strategy	Sports Business	5
P_{10}	Bachelor's	Innovation Manager	Innovation	Sports Industry	7
P_{11}	Bachelor's	HR Consultant	Human Resources	Sports Business	9
P_{12}	Master's	AI Specialist	Digital Platform Development	Sports Equipment	6
P_{13}	Master's	Research Supervisor	Digital Platform Research	Technology	13
P_{14}	Bachelor's	Technology Supervisor	Technology	Sports Goods	8
P_{15}	Master's	Innovation Supervisor	AI Technology	Sports Technology	5

3.1. Validation

To analyze the data and answer the research questions, thematic analysis was employed, incorporating the six-step process of (Braun & Clarke, 2006) thematic analysis. These six steps include: familiarization with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and preparing the report (Bosley et al., 2022). In the first step, the researcher immersed themselves in the data to gain relative familiarity. In the second step, concepts were extracted through categorizing expressive phrases. In the third step, by reviewing initial codes and eliminating similar, incomplete, and unrelated concepts, ٤٥ selective codes were identified. In the fourth step, selective codes were reviewed and categorized, forming ١٦ sub-themes. To validate the sub-themes, a back-and-forth review from step one to step four was conducted. In the fifth step, sub-themes were grouped into ٥ broader main themes and named. The final step of the thematic analysis involved presenting the final report and the research model.

Validation of the Research To enhance the credibility of the study, three key points were considered: using multiple sources, engaging multiple analysts, and employing multiple methods. In this research, samples were selected from a diverse range of fields, including sports, the production and sale of sports goods, technology, and academic experts. For qualitative data analysis, assistance was sought from three interviewees, two PhD students, and three university professors familiar with qualitative methods and data analysis. Additionally, to ensure the transferability of the research findings, interviews were repeatedly reviewed, and maximum and non-repetitive information was extracted. To guarantee confirmability and reliability, the research details and notes were documented and recorded. To determine the reliability of the interviews, the retest method and intraclass agreement between two coders were used.

3.2. Recalculation of Coding Reliability

To assess coding reliability, the methods of recoding and intraclass agreement between two coders were employed. In this approach, several interviews were selected as samples, and each was coded twice within a short time interval. Then, the codes identified at both times were compared. The calculation method for reliability between codings conducted by the researcher in two intervals was as follows:

$$\text{Reliability Coefficient for Re} - \text{Coding} = \frac{2 \times \text{number of agreements}}{\text{total number of codes}} \times 100$$

Formula (1): Method for Calculating the Reliability Coefficient for Re-Coding

In this study, to calculate the reliability of re-coding, three interviews were selected, and each was coded twice by the researcher with a 30-day interval. The results of these codings are presented in Table 2.

Table 2

Calculation of Re-Coding Reliability

Row	Interview Title	Total Number of Codes	Number of agreements	Number of Disagreements	Reliability of Re-Coding
1	Interview 5	31	12	6	77.41
2	Interview 7	17	7	2	82.35
3	Interview 10	21	9	2	85.71
	Total	69	28	11	81.16

The findings in Table 2 indicate that the total codings conducted over the 30-day period amounted to 69. The total number of agreements across the three interviews was 28, while the number of disagreements reached 11 cases. Consequently, the findings related to the reliability coefficient for re-coding show that using the mentioned formula resulted in 81.16%. Since reliability above 60% is considered acceptable, it can be concluded that the codings possess suitable reliability.

3.3. Calculating Reliability Using the Intraclass Agreement Method of Two Coders

To calculate the reliability of the interviews using the intraclass agreement method of two coders, a researcher in the field of sports management (holding a PhD degree) and familiar with thematic analysis was invited to participate as a secondary coder in the study. The researcher, along with this research colleague, coded three interviews. The percentage of intraclass agreement between the two coders, as an indicator of the reliability of the analysis, was calculated using the following formula:

Reliability Coefficient of Two Coders=

$$\frac{2 \times \text{number of agreements}}{\text{total number of codes}} \times 100$$

Formula (2): Method for Calculating the Reliability Coefficient of Two Coders

In this study, to calculate the reliability between two coders, three interviews were selected, and each of them was coded not only by the researcher but also by the chosen expert. The results of these codings are presented in Table 3.

Table 3

Calculation of Reliability Between Two Coders

Row	Interview Title	Total Number of Codes	Number of agreements	Number of Disagreements	Reliability Between Two Coders
1	Interview 3	22	10	3	90.91
2	Interview 8	20	8	2	80
3	Interview 13	22	9	3	81.82
	Total	64	27	8	84.37

The findings in Table 3 indicate that the total number of codes recorded by the researcher and the colleague is 64. The total number of agreements between these codes is 27, and the total number of disagreements is 8. The reliability between coders for the interviews in this study, using the mentioned formula, amounts to 84.37%. Since reliability above 60% is considered acceptable, it can be concluded that the codings have appropriate reliability

4. Findings and Results

After conducting the interviews, the data were analyzed using thematic analysis. All the information provided by the interviewees was extracted as text and concepts. In the next stage, a more comprehensive categorization was performed compared to the previous stage, which was classified into categories. In the final stage, the categories were systematically related to each other, forming themes. Table 4 presents some examples of the interviewees' verbal statements.

Table 4

Verbal statements of the interviewees

Verbal Statements	Initial cods
Communication protocols play a vital role in competing with digital platforms in the sports goods market. These protocols include a set of rules and standards that determine how information is exchanged between users and systems. In the sports goods market, communication protocols can help improve user experience, enhance security, and speed up information exchange.	Communication protocol
They should add new capabilities and features to the platforms and improve the user experience. For example, inventory management plugins, order processing, and data analytics can help enhance platform performance and differentiate them from competitors.	Software plugins
By using user data and analyzing their purchase behavior, products and services are recommended to each user that align with their personal needs and preferences. This can improve the user experience and increase customer satisfaction.	Personalized recommendations
One or more large platforms can leverage network effects and extensive data to capture a significant market share, making it difficult for competitors to enter the market.	Market competition
Translate to English: Creating and strengthening brand identity and recognition in customers' minds. In the digital world, this process involves using various digital tools and channels such as website design, social media, online advertising, and producing video and visual content.	Building a brand
By using user data and analyzing their behavior, advertisements are displayed to each user in a personalized manner. This ensures that ads are shown to more relevant audiences, increasing the likelihood of converting them into customers.	Targeted advertising
Successful digital platforms typically invest heavily in research to introduce new innovations to the market and stay ahead of competitors.	Research for production
Technical, managerial, and analytical skills help employees and managers of platforms adapt to rapid market changes and customer needs.	Skills in the market
Designing a user interface that is simple, visually appealing, and efficient can meet users' needs and expectations. This can result in higher customer satisfaction, increased loyalty, and ultimately, greater sales.	User experience
Utilizing advanced technologies, data management systems, and cloud infrastructure helps platforms provide better services.	Infrastructure and Technology
Implementing automation and robotics technologies in sports goods production can lower labor costs and enhance product quality precision. Additionally, utilizing big data and advanced analytics can optimize the supply chain and minimize logistical expenses.	cost reduction
Digital platforms can boost customer satisfaction by enhancing usability and offering a seamless shopping experience. Furthermore, leveraging modern technologies like artificial intelligence and machine learning can help analyze customer behavior and provide personalized recommendations tailored to their needs.	increasing competitiveness
This technology can help improve user experience, increase efficiency, and provide personalized services. By analyzing user data, it can offer personalized recommendations that align with each user's needs and preferences.	The Role of Artificial Intelligence
A comprehensive framework of rules, policies, and procedures governs the platform's operations and interactions. This includes managing data, protecting user privacy, and overseeing the relationships between sellers and buyers.	Governance in Platforms

Overall, the results of the thematic analysis indicate that competition in digital platforms for the sports goods market consists of 5 main themes, 16 sub-themes, and 45 selective concepts. The method of obtaining the sub-themes and selective concepts is briefly presented in Table 5.

Table 5

Extracting selective concepts and sub-themes

Row	Interviewee	Description of Concept	Description of the sub-theme
1	I_1,I_4,I_5,I_7,I_{14}	User-to-user interactions	Network dynamics
2	I_1,I_3,I_8	Increasing content and information quality	Network dynamics
3	I_5,I_{10},I_{15}	Network scale development	Network dynamics
4	I_2,I_3,I_4,I_8,I_9	Communication standardization	Communication infrastructure
5	I_3,I_7,I_9	Data and service consistency	Communication infrastructure
6	I_1,I_2,I_{13}	System synchronization	Communication infrastructure
7	$I_1,I_4,I_6,I_{13},I_{15}$	Creating added value	Product and service synergies
8	I_2,I_6,I_{11},I_{12}	Expanding variety and choices	Product and service synergies
9	I_{11},I_{12},I_{15}	Loyalty through complementary products and services	Product and service synergies
10	I_1,I_2,I_5	Range of choices	Behavior and expectation of digital buyers
11	I_1,I_2	Improving digital purchase experience	Behavior and expectation of digital buyers
12	I_8,I_4,I_9	Sharing opinions power	Behavior and expectation of digital buyers

13	I_2,I_{10}	Complete digital monopoly	Structure and Dynamics of Platform Markets
14	I_3,I_5,I_{14}	Controlled monopolistic competition	Structure and Dynamics of Platform Markets
15	I_2,I_3,I_4	Two-sided markets	Structure and Dynamics of Platform Markets
16	I_1,I_9,I_{10}	Digital advertising and promotion	Marketing development Strategies
17	I_1,I_8,I_9	Seller branding and trust-building	Marketing development strategies
18	I_{13}	After-sales services and customer support	Marketing development strategies
19	I_2,I_9,I_{14}	Anti-monopoly regulation adherence	Competitive Policies and regulations
20	I_2,I_4,I_{13}	Improving market efficiency	Competitive Policies and regulations
21	$I_8,I_9,I_{10},I_{11},I_{15}$	Artificial Intelligence implementation	Technological innovation in platforms
22	I_{10}	Blockchain application	Technological innovation in platforms
23	I_2,I_5,I_8	Augmented Reality in shopping experience	Technological innovation in platforms
24	I_{12},I_{15}	Virtual Reality for market development	Technological innovation in platforms
25	$I_1,I_{10},I_{11},I_{12},I_{13},I_{15}$	Monitoring healty competition	Monitoring and Evaluating Platform Performance
26	I_2,I_3,I_{12},I_{15}	Efficiency and productivity improvement	Monitoring and Evaluating Platform Performance
27	I_5,I_8,I_{11}	Service quality and user experience assessment	Monitoring and Evaluating Platform Performance
28	I_1,I_4,I_8,I_{10}	Intelligent demand forecasting	Strategic inventory Management
29	I_2,I_3,I_{11},I_{12}	Timely supply and quick demand response	Strategic inventory Management
30	I_1,I_2,I_4,I_8,I_{10}	Diversifying product portfolio	Product and Service development
31	I_2,I_{13},I_{14}	Ensuring product quality	Product and Service development
32	I_1,I_4,I_{10},I_{12}	Specialized sports consulting services	Product and Service development
33	I_1,I_9,I_{11}	Efficient after-sales services	Product and Service development
34	I_1,I_2	Improving managerial and technical skills	Leadership and team capability development
35	I_4,I_6	Cultivating tech-driven leadership culture	Leadership and team capability development
36	I_4,I_6,I_{12}	Designing technological infrastructure	Technical and security infrastructure management
۳۷	I_{11}	Ensuring data security and privacy	Technical and security infrastructure management
38	I_3,I_6,I_{12}	Defining value proposition	Designing and Evolving the Business Model Canvas
39	I_3,I_4	Dsigning sustainable revenue streams	Designing and Evolving the Business Model Canvas
40	I_{10}	Developing distribution and delivery channels	Designing and Evolving the Business Model Canvas
41	I_{10},I_{14}	Managing key costs and resources	Designing and Evolving the Business Model Canvas
42	I_3,I_6	Psychological Pricing for sports products	Cost Management strategies
43	I_1	Production cost optimization	Cost Management strategies
44	I_1,I_7,I_{14}	Market analysis and identifying new opportunities	Investment in Research and Development
45	I_7	Development and innovation in sports Technologies	Investment in Research and Development

I = Interviewee

In Table 5, the final summary of the interviews is presented. The identified sub-themes are listed in five rows, and the importance of each component is determined based on frequency. The main themes are also extracted, and the final research model is derived as shown in Figure 1.
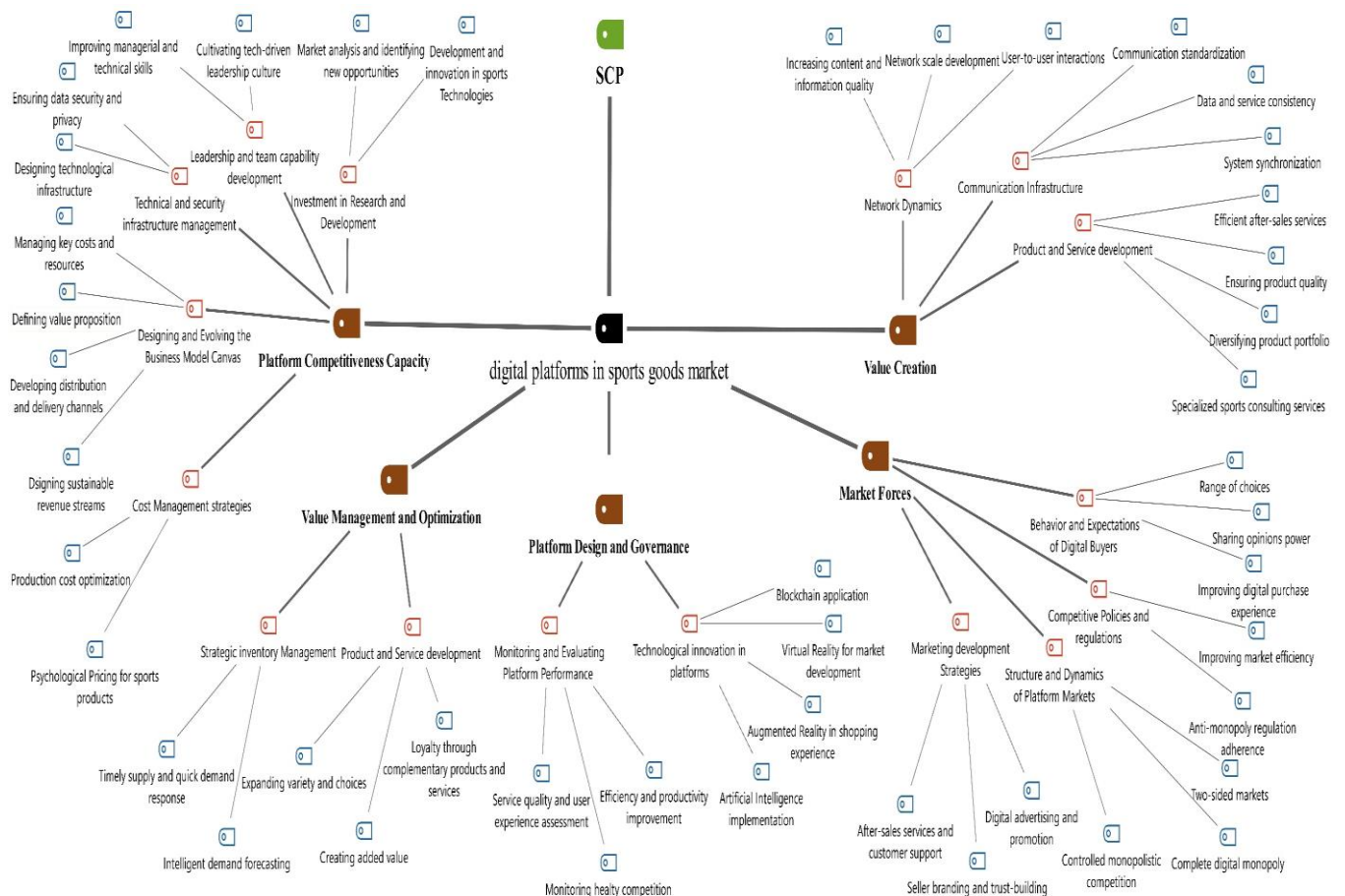
Table 6

Extraction of Main Themes

Row	Main Themes	Description of Sub-Themes	Interviewee Codes	Frequency
1	Value Creation	Network Dynamics (in the Structure Section)	$I_1,I_2,I_3,I_4,I_5,I_6,I_7,I_8,I_9,I_{10},I_{11},I_{12},I_{13},I_{14},I_{15}$	34
		Communication Infrastructure (in the Structure Section)		
		Product and Service Synergies (in the Conduct Section)		
2	Market Forces	Behavior and Expectations of Digital Buyers (in the Conduct section)	$I_1,I_2,I_3,I_4,I_5,I_6,I_8,I_9,I_{10},I_{13},I_{14}$	29
		Structure and Dynamics of Platform Markets (in the structure section)		
		Marketing Development strategies (in the Conduct section)		

3	Platform Design and Governance	Competitive policies and Regulation (in the structure section)		
		Technological Innovations in Platforms (in the Structure Section)	$I_1,I_2,I_3,I_5,I_8,I_9,I_{10},I_{11},I_{12},I_{13},I_{15}$	25
4	Value Management and Optimization	Monitoring and Evaluating Platform Performance (in the Conduct Section)		
		Strategic Inventory Management (in the Structure Section)	$I_1,I_2,I_3,I_4,I_8,I_9,I_{10},I_{11},I_{12},I_{13},I_{14}$	24
5	Platform Competitiveness Capacity	Product and Service development (in the Conduct Section)		
		Leadership and team capability development (in the Conduct section)	$I_1,I_2,I_3,I_4,I_6,I_7,I_{10},I_{11},I_{12},I_{14}$	23
		Technical and Security Infrastructure Management (in the Performance section)		
		Designing and Evolving the Business Model Canvas (in the Structure section)		
		Cost Management Strategies (in the Conduct section)		
		Investment in Research and Development (in the Performance section)		

Figure 1

Final Research Model

5. Discussion and Conclusion

The factors influencing the competition of digital platforms in the sports goods market, as shown in Table (4), are generally divided into five categories: value creation, market forces, platform design and governance, value management and optimization, and platform competitiveness capacity. Each category includes subcomponents that shape the competition of digital platforms and will be discussed in detail in the following subsections.

Value creation consists of three sub-factors: network dynamics, communication infrastructure, and synergy of products and services in the sports goods market platform.

5.1. Value Creation

The value creation process in the sports goods market is influenced by network dynamics, which encompass complex interactions between users and service providers on digital platforms. Communication infrastructure plays a crucial role in facilitating these interactions by enabling data transmission, coordination between parties, and enhancing efficiency in communications. Additionally, product and service synergies contribute to increasing competitive advantages and expanding the digital platform ecosystem in this sector.

5.1.1. Network Dynamics

Network dynamics arise when the value of a product or service for a user grows as the total number of users increases. In the sporting goods market, this phenomenon is evident in digital platforms that connect athletes, trainers, and equipment providers. For example, sports gear platforms like Strava or Nike Training Club benefit from increasing user participation, as larger user bases lead to better product recommendations, enhanced peer interactions, and improved access to specialized sports services.

Network dynamics play a pivotal role in shaping digital platforms in the sports industry, influencing market structures and even contributing to monopolistic tendencies (McIntyre & Srinivasan, 2017). Large sports equipment marketplaces, such as Adidas or Decathlon's online platforms, thrive on extensive user engagement, where increasing numbers of buyers and sellers amplify the platform's efficiency and value. However, the interaction

of additional factors, such as technological innovation and brand partnerships, also drives the evolution of competition in this space (Den Hartigh et al., 2016). While regulatory bodies strive to ensure competitive market conditions to enhance consumer welfare, it is important to recognize that monopolistic digital platforms in sports goods markets can be efficient. This is because network dynamics are optimized when all participants—athletes, retailers, and manufacturers—are centralized within a unified ecosystem. Platforms like Under Armour's Connected Fitness benefit from strong network dynamics, leading to highly concentrated but efficient market structures (Duch-Brown, 2017).

5.1.2. Communication Infrastructure

Participants on digital platforms interact through various communication channels, but the extent to which suppliers' services and products are utilized varies across industries, including the sporting goods sector. This phenomenon, known as network connectivity, affects the defensibility and profitability of digital platforms (Zhu et al., 2021). In the sports market, platforms such as Decathlon or Nike's online ecosystems rely on seamless communication infrastructure to facilitate real-time interactions between athletes, retailers, and equipment manufacturers, ensuring optimal product distribution and user engagement.

For new entrants in highly connected sports networks, competition presents significant challenges, particularly when local buyers source products from international markets. For example, emerging sports brands may struggle to establish themselves against global giants due to the extensive marketing investments required to build brand awareness and customer trust. However, in markets where sports trade primarily occurs within localized clusters—such as regional fitness communities or niche sports equipment markets—network connectivity remains limited, making market entry more accessible for new competitors (Bourai et al., 2024).

5.1.3. Product and Service Synergies

Product and service synergies enhance the value of a platform's core offerings by providing additional functionalities or improving the user experience. In the sporting goods market, these synergies play a crucial role in shaping the success and engagement of digital platforms. For example, sports e-commerce platforms like Nike, Adidas, and Decathlon integrate third-party training

applications, wearable fitness technology, and personalized coaching services to enhance customer interaction and product usability. These add-ons make the platform more valuable for athletes and fitness enthusiasts by complementing core sports products with connected services (Shopify, 2023).

The presence of product and service synergies can generate positive network effects within the sports ecosystem. As more users join a platform, demand for integrated services—such as smart training programs, nutrition tracking, and performance analytics—increases. This, in turn, attracts more developers and fitness experts to contribute additional innovations, further strengthening the platform's appeal (Evans & Schmalensee, 2016). A good example is Garmin and Strava, where wearable sports technology seamlessly integrates with performance-tracking applications, enhancing athletes' training experiences.

Maintaining the quality of these synergies is essential. Leading platforms such as Peloton and WHOOP ensure that third-party services meet high standards to offer a seamless user experience. For instance, ensuring virtual coaching services align with professional training methodologies enhances trust and retention among users (PhilipsHue, 2023).

Continuous innovation in sports-related synergies helps keep digital platforms competitive and relevant. Additionally, product and service synergies open new revenue streams for both the platform and its partners—fitness brands can charge commissions or subscription fees for premium services sold through their network (Parker et al., 2016). By offering a diverse ecosystem of integrated sports products and services, platforms increase user engagement and retention, as customers prefer platforms that provide comprehensive solutions for their training, recovery, and sports performance needs (Cusumano et al., 2019).

5.2. Market forces

They are shaped by external factors such as the behavior and expectations of digital buyers, the structure and dynamics of platform markets, marketing development strategies, and competitive policies and regulation.

5.2.1. Behavior and Expectations of Digital Buyers

The behavior and expectations of digital buyers play a crucial role in shaping the ecosystem of marketplace platforms, particularly in the sporting goods market**. Digital buyers drive demand and influence platform success by seeking tailored shopping experiences, product quality, and seamless interactions. In the sports industry, buyers often look for features such as performance analytics in wearable fitness technology, bulk purchasing options for team sports gear, and personalized training programs embedded within e-commerce platforms (Rodríguez et al., 2024).

Trust is an essential factor for buyers, especially in sports equipment purchases, where reliability and authenticity matter. Marketplace platforms establish trust through verified product reviews, brand endorsements by professional athletes, and secure payment systems, ensuring that consumers can shop with confidence while fostering brand loyalty (Bulsara & Vaghela, 2023).

Marketplace platforms also provide convenience, centralizing a wide range of sporting products and services, saving buyers time compared to sourcing equipment and apparel from multiple retailers. Platforms like Nike, Adidas, and Decathlon integrate multiple product categories—ranging from running shoes to virtual coaching subscriptions—to offer buyers a comprehensive ecosystem of sports-related goods(Le et al., 2004).

Many digital marketplace platforms operate globally, allowing sports buyers to access specialized equipment and training resources from international sellers. For example, buyers looking for high-end cycling gear or customized sports apparel can purchase from overseas manufacturers, often benefiting from better pricing and exclusive product variations (Gupta et al., 2023).

Moreover, digital buyers' feedback and reviews help shape the competitive landscape, influencing other shoppers and sellers. Platforms that host sports communities, such as Strava and WHOOP, allow users to review products, discuss performance metrics, and engage with expert athletes, improving marketplace credibility(Yu et al., 2020).

Advanced marketplace platforms leverage AI-driven technologies to meet the evolving expectations of sports buyers. Personalization tools recommend sports gear based on training history, AI-driven coaching tailors fitness programs, and real-time analytics enhance the shopping experience, keeping digital buyers engaged and satisfied (Rane et al., 2024).

5.2.2. Structure and Dynamics of Platform Markets

The structure and dynamics of platform markets in the sporting goods industry shape competition, innovation, and consumer access to sports-related products and services. Market organization depends on factors such as the number of companies operating within the space, competitive intensity, and the types of products and services offered. In digital sports marketplaces, companies compete for user engagement through technological innovation, brand loyalty, and strategic partnerships, impacting market concentration and accessibility (Muhamed & Magdy., 2020).

According to (Evans & Schmalensee, 2016), platform markets characterized by network effects and multi-sided interactions often lead to the emergence of dominant sports-focused platforms. For instance, large digital sporting goods platforms such as Nike, Adidas, and Decathlon leverage data analytics, smart wearables, and virtual coaching services to consolidate their market presence. These dominant platforms create high entry barriers for smaller companies, leading many new entrants to focus on niche sports markets such as specialized running gear, customized training equipment, or esports-related products.

Intense competition exists among sporting goods platforms, where companies strive to attract price-sensitive consumers by integrating value-added services. Subscription-based fitness programs, AI-driven training recommendations, and exclusive athlete sponsorships are key strategies to engage users. Platforms like Garmin and WHOOP use smart fitness wearables to enhance consumer involvement, reinforcing their market position.

Additionally, regulatory policies play a critical role in shaping competition in digital sports marketplaces. Fair pricing laws, consumer protection policies, and restrictions on data usage influence how platforms operate within different regions. Oversight ensures that dominant market players do not engage in monopolistic practices while fostering innovation among emerging sports technology providers.

5.2.3. Marketing Development Strategies

Sellers on sporting goods marketplace platforms play a crucial role in shaping the ecosystem, offering a diverse range of sports equipment, apparel, and services that attract buyers (Sun, 2010). These sellers range from global brands to individual entrepreneurs specializing in customized

athletic gear, performance tracking devices, and personalized training programs, contributing to the platform's competitiveness (Parker et al., 2016).

Marketplaces for sporting goods, such as Nike, Adidas, and Decathlon, host a variety of sellers, ensuring buyers have access to professional-grade equipment, sports accessories, and specialized services tailored to different athletic needs. For example, a platform catering to cycling enthusiasts may feature sellers offering everything from high-performance bicycles to GPS-enabled fitness trackers that enhance training efficiency.

Many sporting goods platforms offer user-friendly interfaces and seller-support tools, making it easier for businesses to establish their online presence. Platforms such as Strava, Under Armour's Connected Fitness, and Garmin provide integrated analytics, athlete engagement tools, and product customization features that help sellers market their offerings effectively (Smith, 2020).

Trust and credibility are vital in sports-related sales, where product quality and authenticity matter. Buyers rely on customer reviews, professional athlete endorsements, and verified certifications to ensure they are investing in reliable sports gear. A positive reputation can significantly impact repeat purchases and user loyalty, as seen in platforms like Peloton, where user feedback directly influences product development and service enhancements (Tadelis, 2016).

The global reach of sporting goods platforms allows sellers to access international markets, connecting buyers with specialized equipment and training solutions not readily available in their local regions. For instance, sellers offering customized running shoes or high-altitude training accessories can find demand from elite athletes and sports professionals worldwide (Gupta et al., 2023).

Additionally, many digital sports marketplaces provide sellers with support services such as automated payment processing, streamlined logistics, and personalized customer service solutions, helping them scale their operations efficiently. Sellers on these platforms often pay fees or commissions for listing products, with pricing models based on sports category demand, brand recognition, and competitive positioning (Hasiloglu & Kaya, 2021).

5.2.4. Competitive Policies and Regulation in Sporting Goods Platforms

Competitive policies and regulation play a crucial role in ensuring fair competition and preventing monopolistic

practices within sporting goods marketplaces. These regulations aim to maintain a balanced digital ecosystem where no single platform dominates to the detriment of athletes, retailers, and manufacturers. Antitrust laws specifically target anti-competitive behaviors such as exclusive supplier agreements, unfair pricing strategies, and restricted access to distribution channels, ensuring that buyers and sellers have diverse options in the sports industry (CompetitionCouncil, 2023; Soomro & Yuhui, 2023).

Governments implement competitive policies to foster innovation and maintain market dynamism. In the sporting goods sector, such policies encourage new entrants, support emerging sports technology startups, and regulate the expansion of dominant brands like Nike, Adidas, and Under Armour. Ensuring fair competition enables athletes and consumers to access a variety of training gear, performance-enhancing wearables, and specialized sports equipment without restrictive monopolistic control (CompetitionCouncil, 2023).

Major digital sports platforms have come under scrutiny due to their market dominance. For example, platforms offering wearable fitness technology, AI-driven training assistance, and e-commerce sports apparel may limit access to competitors by enforcing exclusive partnerships or influencing search algorithms. Regulatory bodies have proposed stricter oversight on data privacy, cross-market accessibility, and fair pricing, ensuring that these platforms do not exclude smaller competitors or manipulate industry standards (Evans & Schmalensee, 2016).

Additionally, marketplace intermediaries, including sports coaching apps, event sponsorship platforms, and equipment rental services, operate under regulations that ensure fair practices. These intermediaries must maintain transparent fee structures, equitable advertising opportunities, and compliance with consumer protection laws to promote ethical business conduct (Evans & Schmalensee, 2016).

Different countries have distinct regulations governing sports-related digital platforms. The European Union imposes stricter consumer protection standards regarding data privacy and anti-monopoly practices, whereas U.S. regulatory agencies focus on balancing competition and fostering innovation in sports markets (CompetitionCouncil, 2023).

5.3. Platform Design and Governance

The technical aspects of platform companies, such as technological innovations in platforms, as well as the monitoring and evaluation of platform performance, have a significant impact on competition in digital platforms. These companies are increasingly utilizing platform design elements and algorithmic management to allocate, monitor, and evaluate performance.

5.3.1. Technological Innovations in Platforms

Technological innovations play a pivotal role in shaping the sporting goods industry, revolutionizing how athletes, retailers, and consumers interact with digital platforms. Advancements in artificial intelligence (AI), machine learning (ML), and wearable technology are transforming sports commerce by providing personalized recommendations, interactive training experiences, and efficient search algorithms that enhance user engagement (Hagiu & Wright, 2015).

AI-Driven Personalization in Sporting Goods Platforms: Leading sports brands such as Nike, Adidas, and Under Armour employ AI-driven analytics to tailor recommendations based on user preferences, training goals, and performance data. Wearable sports technology, including Garmin and WHOOP, integrates machine learning algorithms to track biometrics, monitor endurance levels, and suggest personalized workouts, improving both individual fitness and competitive training programs (Evans & Gawer, 2016).

Innovations in Secure Transactions for Sports Commerce: Digital sporting goods marketplaces are increasingly adopting secure payment systems and blockchain-based verification to ensure authenticity, reliability, and fraud prevention in transactions (Teece, 2010b). Platforms like Decathlon and Strava integrate real-time authentication tools to prevent counterfeit sports gear sales while ensuring seamless payment processing for users worldwide.

Transforming Market Dynamics in Sports Platforms: The rise of virtual training platforms has expanded access to sports coaching, fitness analytics, and online competitions, reshaping traditional industry dynamics. Peloton and Zwift, for example, offer immersive digital training experiences, enabling users to participate in interactive workouts and global sports events from their homes (Chesbrough, 2003).

These technological advancements not only enhance operational efficiency but also boost user engagement, brand loyalty, and market scalability, ensuring that sporting goods platforms remain competitive in the evolving digital landscape (Rane et al., 2023).

5.3.2. Monitoring and Evaluating Platform Performance

Effective monitoring and evaluation of sporting goods digital platforms requires a structured framework of rules, policies, and best practices to ensure transparency, security, and fair competition. Leading sports marketplaces and training platforms employ algorithmic governance, real-time data analytics, and regulatory compliance measures to optimize operations and enhance user experiences (Gawer & Cusumano, 2014).

Decision-Making and Data Management in Sports Platforms: Sporting goods platforms such as Nike Training Club, Garmin Connect, and Strava rely on data-driven decision-making to personalize offerings and improve functionality. These platforms track user fitness behavior, purchase patterns, and training history to tailor recommendations while ensuring consumer privacy and data security (Parker et al., 2016).

User Access, Security, and Compliance Measures: Ensuring secure transactions and ethical advertising is essential for sports-focused platforms. Companies implement fraud detection algorithms, authenticity verification for premium sports gear, and athlete endorsement validations to maintain credibility. For instance, platforms selling high-performance running shoes or biometric monitoring devices must comply with regulations that prevent counterfeit products and misleading claims (Tiwana, 2014).

Transparency and Governance in Sports Ecosystems: Effective governance ensures that training content, fitness tracking analytics, and product recommendations are presented accurately to prevent misinformation. Platforms like Peloton, Zwift, and Under Armour's Connected Fitness integrate review-based moderation systems to filter unreliable information and maintain a trustworthy environment. Additionally, sports regulatory bodies emphasize fair play policies and ethical AI usage within digital fitness platforms (UNESCO, 2023).

5.4. Value Management and Optimization

Strategic Inventory Management plays a key role in platform companies, helping them forecast demand, optimize resource allocation, and prevent shortages or excess stock.

Product and Service Development and Enhancement is also a crucial part of this strategy, improving product quality, introducing new features, and personalizing services to strengthen user experience and market positioning.

This comprehensive approach allows platform companies to maintain their competitiveness and establish stronger connections with users.

5.4.1. Strategic Inventory Management in Sporting Goods Platforms

Strategic inventory management plays a crucial role in the sporting goods industry, helping companies optimize stock availability, minimize costs, and ensure timely delivery of equipment and apparel. Effective inventory strategies allow digital sports platforms to balance supply and demand efficiently, strengthening their competitive positioning (Gawer & Cusumano, 2014).

Automated Inventory Management in Sports Platforms: Leading sports brands such as Nike, Adidas, and Decathlon leverage automated inventory management systems to monitor stock levels in real time. These systems integrate with point-of-sale (POS) tools, warehouse tracking solutions, and e-commerce platforms to streamline logistics, ensuring that products like high-performance footwear, fitness accessories, and smart sports gear remain readily available (Tiwana, 2014).

Demand Forecasting in Sporting Goods Markets: Demand forecasting is essential for predicting seasonal sales trends based on historical data and market fluctuations. For instance, spikes in running shoe sales during marathon season or increased demand for winter sports gear require platforms to anticipate stock needs accurately. Companies use AI-driven analytics to assess buyer behavior and training patterns, ensuring optimal stock replenishment while avoiding surplus inventory (Smith & Trigeorgis, 2004).

Just-In-Time (JIT) Inventory Approach in Sports Equipment: Many sports brands and retailers adopt the Just-In-Time (JIT) inventory strategy to minimize storage costs while maintaining supply efficiency. This model requires precise coordination with athletic gear manufacturers and distributors, ensuring timely production and delivery of custom sports apparel, performance-tracking devices, and fitness equipment (Chesbrough, 2003).

Supplier Collaboration in Sporting Goods Logistics: Building strong supplier relationships enhances inventory stability. For example, major sporting goods retailers negotiate bulk purchase agreements and exclusive distribution partnerships to secure access to specialized sports gear while maintaining flexibility in inventory management. Regular inventory audits and cycle counts help maintain accurate stock records and prevent shortages or excess inventory (Stefano et al., 2023).

Real-Time Analytics for Inventory Optimization: Utilizing real-time analytics helps sporting goods platforms identify inefficiencies and trends in stock performance. Advanced data visualization tools allow retailers to monitor inventory flow, anticipate restocking needs, and optimize warehouse operations based on consumer engagement metrics and training equipment demand (Teece, 2010b).

5.4.2. *Product and Service Development in Sporting Goods Platforms*

Effective product and service development in sporting goods marketplaces requires strategic planning to enhance user experience, optimize platform offerings, and ensure a competitive edge. Companies implement high-quality product listings, dynamic pricing strategies, and automated inventory management to align with evolving consumer demands in the sports industry (Gawer & Cusumano, 2014; Parker et al., 2016; Tiwana, 2014).

Optimizing Sports Product Listings and Pricing Strategies: Sporting goods platforms such as Nike, Adidas, and Decathlon focus on detailed product descriptions, high-resolution images, and interactive product previews to help customers make informed purchasing decisions. Dynamic pricing models based on seasonal demand, major sporting events, and competitive analysis allow brands to attract diverse customer segments while maintaining price competitiveness (Tiwana, 2014).

Advanced Inventory Management in Sports Platforms: Efficient inventory control is critical for sports retailers and digital marketplaces to ensure timely product availability. Companies use AI-driven demand forecasting and automated stock replenishment to prevent shortages of popular products, such as specialized running shoes, cycling equipment, and performance wearables (Mount & Bieler, 2008; Smith & Trigeorgis, 2004).

Customer Engagement and Digital Marketing for Sporting Goods: Strong SEO strategies and targeted social media advertising boost brand visibility in the highly competitive sports retail space. Platforms like Strava,

Peloton, and Garmin integrate community-based engagement, allowing athletes and fitness enthusiasts to interact with brands, share training experiences, and discover new products aligned with their fitness goals.

Supplier Partnerships and Performance Analytics in Sporting Goods Platforms: Building reliable supplier relationships ensures a steady flow of specialized sports equipment, including high-performance wearables, endurance training accessories, and customized team uniforms. Real-time analytics help platforms track sales performance, identify emerging market trends, and refine product offerings for sports consumers worldwide (Chesbrough, 2003; Evans & Gawer, 2016). These strategies help platforms establish and maintain their market presence while minimizing costs associated with overstocking or stockouts.

5.5. *Platform Competitiveness Capacity*

The resources and capabilities of a company that impact platform competition include various factors such as leadership development and team empowerment, management of technical and security infrastructure, design and evolution of the business model canvas, cost management strategies, and investment in research and development.

5.5.1. *Leadership and Team Capability Development in Sporting Goods Platforms*

Strong leadership and team capability development are essential for sporting goods marketplace platforms, ensuring effective coordination, innovation, and high-performance execution. Leadership in this sector involves setting clear goals for product development, athlete engagement, and sports marketing strategies, while maintaining efficient communication to align team roles with industry objectives (Gawer & Cusumano, 2014).

Strategic Team Coordination in Sports Platforms: Effective leadership in sporting goods platforms involves task delegation based on expertise in sports technology, retail logistics, and athlete performance analytics. For instance, digital platforms like Nike Training Club and Strava assign specialized teams to product innovation, athlete collaboration, and fitness tracking development, ensuring optimal results. The use of collaboration tools and AI-driven communication systems further enhances coordination and efficiency (Parker et al., 2016).

Performance Monitoring and Professional Development: Leadership in sports platforms requires continuous monitoring of team performance using key performance indicators (KPIs) related to user engagement, training program effectiveness, and product sales in sports e-commerce. Regular feedback loops support coaching staff, sports gear designers, and platform engineers, ensuring skill enhancement through professional training programs tailored to the evolving sports industry (Tiwana, 2014).

Problem-Solving and Innovation in Sporting Goods Platforms: Encouraging innovative solutions in sports marketplaces fosters a problem-solving culture that improves product quality and service delivery. Platforms such as Peloton and WHOOP employ leadership strategies that drive technological advancements in virtual coaching, wearable fitness analytics, and athlete-driven content creation, helping companies remain competitive and responsive to industry demands.

Motivation and Customer Satisfaction in Sports Commerce: Recognizing team achievements in sports tech innovation, brand endorsements, and fitness product excellence strengthens workplace morale. A positive work environment, combined with customer-focused strategies, ensures that athletes, fitness enthusiasts, and sports professionals receive high-quality services. Digital platforms integrate athlete testimonials, customer review insights, and sports community engagement to optimize leadership effectiveness (Mount & Bieler, 2008).

5.5.2. *Technical and Security Infrastructure Management in Sporting Goods Platforms*

Technical and Security Infrastructure Management in Sporting Goods Platforms: Managing the technical and security infrastructure in a sporting goods marketplace platform requires careful financial planning due to varied cost structures. Key components include platform development and maintenance, which typically account for about 20-30% of total costs, ensuring robust functionality for listing and purchasing sports equipment. Hosting and infrastructure costs can range from $100 to $1,000 monthly, depending on traffic and storage needs, particularly for high-quality images and videos showcasing athletic gear.

Payment processing fees range from 2-5% per transaction, a critical factor considering the seasonal spikes in demand for specific sports items. Marketing and advertising expenses, essential for attracting retailers and consumers, can take up 15-25% of the budget—especially relevant for seasonal campaigns promoting gear for events like marathons, tournaments, and training seasons.

Customer support costs range from 10-20%, ensuring timely assistance for users navigating equipment specifications or troubleshooting purchase concerns. Compliance and legal costs, such as regulations for protective sports gear, may require annual budgeting of around $1,000 to $5,000. Salaries and benefits for a small team can vary from $5,000 to $20,000 per month, covering product specialists who verify authenticity and performance standards of sporting goods.

Investing around $500 to $2,000 monthly in data analytics and monitoring tools is recommended to track trends in consumer preferences—for example, monitoring shifts in demand between indoor fitness equipment and outdoor sports gear. Understanding these costs is crucial for ensuring profitability, given the unique financial dynamics of sporting goods marketplaces (Smith, 2020).

5.5.3. *Designing and Evolving the Business Model Canvas*

The Business Model Canvas is a strategic management tool designed to visualize and evaluate the key elements of a business model on a single page (Osterwalder & Pigneur, 2010). For a marketplace platform, this canvas comprises nine building blocks across four main areas: customers, offer, infrastructure, and financial viability (Zott et al., 2011). Each aspect is critical for ensuring a competitive and well-structured marketplace tailored to sports equipment and gear:

- Customer Segments: Identifying target audiences such as professional athletes, sports clubs, casual fitness enthusiasts, and specialized retailers who seek performance-driven products.

- Value Propositions: Providing unique offerings like verified high-quality sports gear, exclusive sponsorship deals with manufacturers, and specialized recommendations based on training intensity and sport type.

- Channels: Establishing digital storefronts and leveraging partnerships with fitness centers, sports academies, and event organizers to effectively distribute and promote sporting goods.

- Customer Relationships: Building trust through expert product reviews, interactive community features for athletes, and personalized consultations on gear suitability for various sports.

- Revenue Streams: Generating income through direct sales, rental services for expensive equipment, subscriptions for coaching and analytics, and commission-based earnings from retail partnerships.

- Key Resources: Essential components such as proprietary technology for performance tracking, brand collaborations with sports equipment manufacturers, and a logistics network optimized for fast delivery of seasonal sports gear.

- Key Activities: Maintaining a platform with seamless product listings, organizing promotions around major sporting events, and facilitating secure transactions between buyers and sellers.

- Key Partnerships: Establishing collaborations with sports brands, event sponsors, and distributors to enhance credibility and market reach.

- Cost Structure: Managing costs related to platform maintenance, marketing campaigns during peak sports seasons, compliance with safety standards for athletic gear, and logistics for timely equipment delivery (Teece, 2010a; Wirtz et al., 2016).

5.5.4. Cost Management Strategies

Effective cost management in sporting goods marketplaces is essential for maintaining financial sustainability and optimizing operational efficiency. By strategically managing expenses, platforms can balance profitability with industry-specific demands. A key aspect of this strategy involves controlling listing fees, which may be fixed or tiered based on product category or price to enhance seller engagement and affordability (Hagiu & Wright, 2015). Additionally, structuring commission fees—typically ranging from 5% to 20%—allows marketplaces to remain competitive while ensuring steady revenue streams (Eisenmann et al., 2006). Subscription models further help offset costs, providing sellers with premium access to enhanced features and reduced commission rates. Efficient payment processing is another crucial factor, as platforms typically incur fees of 2-5% per transaction, necessitating optimization of financial workflows for cost-effective transactions (Evans & Schmalensee, 2016).

Shipping and logistics require precise management to prevent cost overruns. Platforms must establish clear policies regarding whether sellers or buyers absorb shipping costs while leveraging bulk shipping agreements to reduce expenses. Advertising strategies should also focus on cost-effectiveness by utilizing targeted digital marketing campaigns and performance-based advertising models, such as impression-based or click-based pricing (Rochet & Tirole, 2003). Furthermore, integrating artificial intelligence and machine learning helps marketplaces analyze consumer preferences and forecast demand trends, enabling adaptive inventory strategies to minimize excess stock and optimize resource allocation. The ability to dynamically adjust marketing and operational expenses ensures marketplaces stay financially viable while meeting the evolving needs of athletes, fitness enthusiasts, and sports retailers. Since each marketplace has its distinct financial structure, reviewing platform-specific terms and conditions is essential to maintaining profitability and competitiveness (Hagiu, 2014).

5.5.5. Investment in Research and Development

Investment in Research and Development in Sporting Goods Marketplaces: Investing in research and development (R&D) within a sporting goods marketplace is crucial for driving innovation and maintaining a competitive edge in a rapidly evolving industry (Hagiu & Wright, 2015). Key R&D investment areas include enhancing platform functionality to improve user experience, integrating cutting-edge technologies such as artificial intelligence (AI) for personalized sports equipment recommendations, and leveraging machine learning to refine product searches based on athlete preferences (Evans & Gawer, 2016).

These investments facilitate the development of unique offerings, optimize operational efficiency, and expand scalability (Teece, 2010b). For example, leading sports marketplaces have increasingly allocated resources to R&D efforts, including the creation of smart wearables that track performance metrics and improvements in augmented reality (AR) technology for virtual try-ons of sports gear. Major brands such as Nike and Adidas invest heavily in innovation, incorporating advanced materials for athletic footwear and AI-driven analytics for product customization.

Effective R&D strategies within the sporting goods sector involve deeply understanding consumer behavior—such as shifting trends in demand for high-performance running shoes or sustainable sportswear—leveraging technological advancements in sports science, and aligning R&D activities with industry developments and athlete needs to drive growth and innovation (Chesbrough, 2003).

5.6. Conceptual Framework Using the SCP Paradigm

Conceptual Framework Using the SCP Paradigm in Sporting Goods Marketplaces: The SCP (Structure-Conduct-Performance) framework establishes a causal link between market structure, firm behavior, and overall industry performance, suggesting that market structure influences conduct, which then affects outcomes (Church & Ware, 2000).

In the sporting goods sector, supply and demand conditions shape the industry's structure, which directly impacts retailer strategies and market performance (Smith & Trigeorgis, 2004). Competitive markets with numerous sporting equipment manufacturers and retailers typically foster better industry performance, as brands innovate to attract athletes, professional teams, and fitness enthusiasts (Carlton & Perloff, 2000). However, high market concentration—such as dominance by a few major brands—can lead to reduced price competition and potential collusion, affecting fair market pricing and consumer choices (Bain, 1951; Scherer & Ross, 1990).

The SCP paradigm assumes equilibrium conditions and complete information (Hackett, 2014). In the sporting goods industry, perfect competition would entail many small retailers offering homogeneous products at standardized prices, without significant entry barriers or informational asymmetry (Mount & Bieler, 2008; Roth, 2007). However, in reality, product differentiation—through technological advancements in sports equipment, brand prestige, and exclusive sponsorships—creates deviations from perfect competition. This is particularly evident in areas such as high-performance footwear, wearable fitness technology, and specialized athletic gear, where leading brands maintain market dominance through patented innovations and athlete endorsements.

By applying the SCP model within the sporting goods marketplace, stakeholders can better understand market dynamics, competitive pressures, and industry evolution, ensuring sustainable growth and fair competition.

5.6.1. Structure

Market structure in marketplace platforms includes the characteristics and conditions that determine how operations and interactions are conducted. This structure encompasses the number and size of active companies, entry and exit barriers, market concentration, and the role of platforms. The number and size of companies play a crucial role in determining market competitiveness; platforms with many small and medium-sized companies are usually more competitive. Entry barriers include high initial costs and the need for advanced technology, which can significantly impact market structure. Market concentration refers to the dominance of large companies in the market, and high concentration can lead to reduced competition and increased pricing power. Platforms act as intermediaries between buyers and sellers, providing various tools and services to improve market efficiency (Carlton & Perloff, 2015; Parker et al., 2016; Shapiro & Varian, 2008; Smith, 2020; Tirole, 1988).

Market structure refers to the arrangement of different components of a whole. Factors such as the degree of concentration of buyers and sellers, product differentiation, economies of scale, and market entry conditions are among the determinants of market structure. High concentration and significant barriers to entry for new firms can lead to the formation of monopolies in that market. Market structure is important due to its impact on market performance, prices, profits, efficiency, and productivity. Various indicators are used to examine market structure, including concentration indices and entry barriers (Khoddadkashi & Jafari Lilab, 2012).

One important aspect of market structure is concentration. Using the concept of concentration, one can examine the market structure and the level of competition and monopoly in different markets or the entire economy. Concentration refers to how the market is divided among different firms, and in measuring it, the relative size of firms is considered. The more unevenly the market is distributed among firms, the higher the concentration will be, and all else being equal, the more firms there are, the lower the degree of concentration will be. In fact, the level of concentration has an inverse relationship with the number of firms and a direct relationship with the unequal distribution of firms' market shares (Malekan, 2011).

5.6.2. Conduct

Conduct is a key element of the market. Various aspects of firm conduct include business objectives, pricing strategies, product design and branding, advertising and marketing, research and development, collusion, and mergers. Additionally, the conduct of firms with each other in the market may be based on alliances and cooperation, where firms reach explicit or implicit agreements on matters such as pricing and production levels. Cooperation among firms reduces the competitive environment in the

market and decreases consumer welfare (Sadrayi Javaheri et al., 2012).

According to the Organization for Economic Cooperation and Development (OECD), which comprises 30 advanced countries, research and development (R&D) involves systematic activities aimed at expanding human knowledge and social culture, and applying this knowledge to new uses (OECD, 2012). In essence, R&D involves uncovering new products, processes, and services, and utilizing knowledge to develop innovative and enhanced products, processes, and services that cater to market demands (Sadrayi Javaheri et al., 2012). In the R&D sector, which is one of the conduct components of the market, attention to absorptive capacity and innovation is of particular importance. Absorptive capacity determines the ability of companies to collect, process, and use new knowledge obtained from external sources (Haghighi & Hosseini, 2015). Innovation is also a concept directly related to absorptive capacity. Employees with high knowledge absorption capabilities improve the organization and contribute to enhancing innovation in organizational performance (Haghighi & Hosseini, 2015; Kostopoulos et al., 2011).

Advertising means introducing and promoting a firm's products through various methods. (Kotler, 2012) Advertising is defined as any paid form of presentation and promotion of ideas, goods, or services by a recognized sponsor. However, effective advertising is one that can attract the audience's attention, leave a memorable impact, stimulate the audience's purchase action, and awaken the audience's sensory perception (Samsam Shariat et al., 2007). In fact, advertising means drawing the target audience's attention to a specific message presented by the advertiser. In this sense, advertising draws people's attention to the company's products, services, and ideas. Advertising serves to communicate business information to both current and potential customers. It offers details about the advertiser, the characteristics and quality of the product, its availability, and the advantages of using the firm's product. Advertising targets a group of individuals, but this group does not mean the entire society, as target consumers form a part of the whole society. The purpose of advertising is to introduce products to customers, and based on the advertising conducted, customers become familiar with the quality, price, and services of firms. Overall, advertising has a direct impact on sales, and increased sales also affect the firm's profit (Garavaglia, 2021).

conduct Variables in the Market

1. Pricing Policies: Price determination depends on the structural characteristics of the industry. Pricing policies include cost-based pricing, marginal cost pricing, entry deterrence pricing, limit pricing, price leadership, and price discrimination. For multi-sided monopolists, avoiding direct competitive pricing policies that lead to price wars is a priority.

2. Product Design, Branding, Advertising, and Marketing: The key characteristics of a firm's product influence non-price competition. Product differentiation is shaped by the strategies that firms employ.

3. Research and Development: Investing in research and development offers a chance for non-price competition. The scope and effectiveness of R&D, along with the speed at which new ideas are disseminated, are crucial for technological advancement. Successful R&D provides benefits to the firm and contributes to economic growth.

4. Collusion: Firms may collude to avoid price and non-price competition, reaching explicit or implicit agreements on matters such as pricing, product levels, marketing, or R&D expenditures. Collusion can be overt or tacit.

5. Mergers: Horizontal, vertical, and conglomerate mergers have various impacts on seller concentration, the degree of vertical integration, and diversification. Each type of merger decision has feedback effects on the market or industry structure.

5.6.3. *Performance*

Organizational performance is a crucial economic topic and serves as a key success criterion for commercial companies and the banking sector. Performance indicators are categorized into subjective and objective types. Objective indicators encompass profitability measures such as return on assets, return on equity, return on investment, earnings per share, and stock returns. Subjective indicators rely on stakeholder judgments, including customer satisfaction, employee satisfaction, and the success of new product deliveries (Abzari et al., 2009). The most significant performance indicators are profitability and efficiency. Profitability, which reflects a company's ability to generate profit, includes economic value added, stock prices, and stock returns, as supported by empirical studies

(Jalili et al., 2012). Market value added indicates the difference between the average market value of equity and the average book value of equity (Rahnamay Roudposhti et al., 2008). Additional profitability indicators include net profit, return on assets, and return on equity. Growth can be an alternative indicator of performance, especially for firms pursuing goals such as sales or growth. Efficiency is the optimal allocation of resources and represents the maximum use of resources or the minimum cost tolerance with existing technology. Different types of bank efficiency include scale efficiency, technical efficiency, allocative efficiency, economic efficiency, and price efficiency (Hasanzadeh, 2007).

Many studies have been conducted on market structure and the interactions of key market elements both domestically and internationally. These studies are divided into two main groups: the first group examines service markets such as banking, hospitality, and transportation within the SCP framework, including studies by Khan et al. (2018), Pawlowska (2015), Shaik et al. (2009), Edwards et al. (2006), Fu (2003), Molyneux and Forbes (1995), Abbas-Beni and Nazari (2017), Shahiki Tash et al. (2015), and Dehghan Dehnavi et al. (2011). The second group focuses on the elements of structure, conduct, and performance in the goods market, including studies by (Banson et al., 2018), (Yoon, 2004), and (Sadrayi Javaheri et al., 2012).

The quality of products and services serves as a crucial performance indicator for individual consumers, groups, regulators, and governments. Technological growth, driven by investment in research and development, is also a key performance-related indicator. Over the long term, technological growth has significant feedback effects that influence both demand conditions (by altering consumer tastes and preferences with new products) and supply conditions (by changing technology and cost structures through more efficient production processes).

The SCP (Structure-Conduct-Performance) framework provides insights into how market structure influences the conduct and performance of digital platform companies. Market dominance, often resulting from a concentrated market, can lead to anti-competitive actions like aggressive pricing and exclusive contracts. The management of these companies plays a crucial role in innovation and technology investment, impacting economic performance. Positive, dynamic behavior can enhance economic outcomes, while anti-competitive actions can harm innovation and consumer welfare. Changes in pricing, interoperability, and platform behavior can lead to tipping and lock-in effects, affecting the success and sustainability of digital platforms in a competitive environment.

Qualitative data analysis reveals that competition in the digital platforms of the sports goods market encompasses 5 main themes, 16 sub-themes, and 45 selective concepts across three themes: structure, conduct, and performance.

Figure 2

Final Pattern
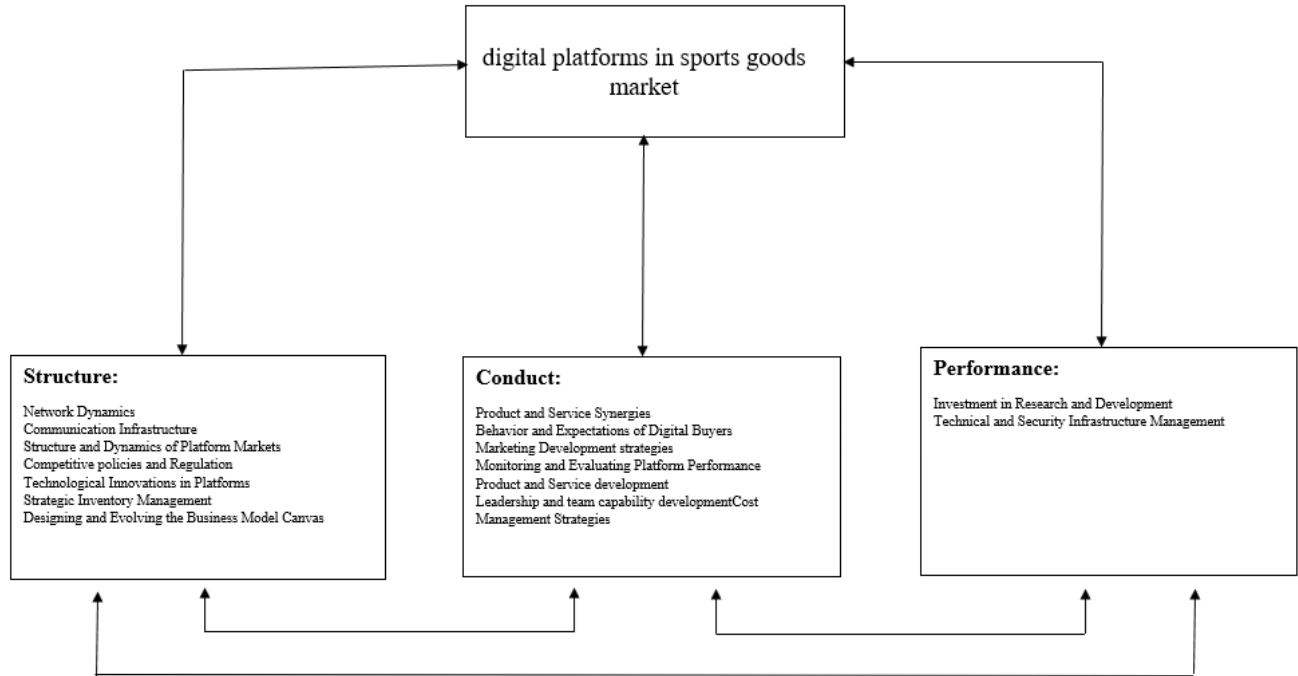
The rise of digital platform companies has brought about significant changes, reshaping the dynamics of value creation and competition. Understanding the nature and competitive dynamics of these companies is essential for grasping the strategies that lead to their success and sustainability. Over the years, research has explored various aspects of digital platform competition, including the emergence of dominance or leadership (Parker & Van Alstyne, 2005; Shapiro & Varian, 1999), strategies to attract complements and create network effects (Gawer, 2014), the success of digital platform companies (Hidding et al., 2011), and the entry of companies with new technologies (Zhu & Iansiti, 2012), These studies have identified specific factors affecting the success and sustainability of platforms, but they have often been scattered and separate.

This study has identified 16 factors from the reviewed literature, categorized into five general groups: Value Creation , Market Forces, Platform Design and Governance, Value Management and Optimization , Platform Competitiveness Capacity. Based on their potential impact on digital platform competition in the sports goods market and the success and sustainability of

companies, all identified factors have been placed within the SCP framework.

These factors are divided into three categories: those with a positive impact, those with a negative impact on the success and sustainability of digital platforms in competition, and those with ambiguous impacts, as shown in Figure 2. Based on their potential impact on digital platform competition, they can be categorized into three groups:

1. Factors with Positive Impact:
- Network Dynamics (in the structure section)
- Product and Service Synergies (in the conduct section)
- Investment in Research and Development (in the performance section)
- Marketing Development Strategies (in the conduct section)
- Technical and Security Infrastructure Management (in the performance section)
- Technological Innovations in Platforms (in the structure section)
- Product and Service Development (in the conduct section)

- Leadership and Team Capability Development (in the conduct section)

2. Factors with Negative Impact:

- Competitive Policies and Regulation (in the structure section)
- Cost Management Strategies (in the conduct section)

3. Factors with Ambiguous Impact (both positive and negative):

- Communication Infrastructure (in the structure section)
- Structure and Dynamics of Platform Markets (in the structure section)
- Strategic Inventory Management (in the structure section)
- Designing and Evolving the Business Model Canvas (in the structure section)
- Behavior and Expectations of Digital Buyers (in the conduct section)
- Monitoring and Evaluating Platform Performance (in the conduct section)

This categorization aids managers in achieving greater success and sustainability by assessing their company's market position and adjusting strategies accordingly. Digital platform companies leverage positive factors to boost market share and differentiate themselves, becoming dominant and resilient against competition. Conversely, negative factors raise entry barriers, intensify competition, and diminish the distinctiveness of these companies. Depending on the specific characteristics of the company or industry, certain factors may have either a positive or negative impact.

5.7. Research Limitations

This study provides a conceptual framework based on the Structure-Conduct-Performance (SCP) model to analyze the competitive dynamics of digital platforms in the sports goods market. By integrating the SCP paradigm, the study offers empirical guidance for evaluating platform performance, helping managers navigate market uncertainties, adapt to competitive shocks, and refine strategies—including assessing entry and exit barriers, regulatory policies, and competitive positioning. Furthermore, the study contributes to understanding market structure, competition, and firm behavior, offering insights into improving profitability and long-term sustainability in digital marketplaces. Additionally, it paves the way for

future research opportunities, particularly regarding the meta-analysis of individual factors affecting the success and sustainability of digital platforms.

Despite its contributions, the study faces several limitations that must be considered to accurately assess the scope and generalizability of its findings. First, the qualitative nature of the research and use of thematic analysis means that conclusions are primarily drawn from expert opinions, lacking large-scale quantitative validation, which may limit the applicability of results across different digital marketplaces. Second, while the sample size and purposive sampling method were adequate to achieve theoretical saturation, they may not fully encompass diverse perspectives across geographic regions and industry segments. Third, the reliance on semi-structured interviews implies that insights are shaped by expert experiences, potentially overlooking emerging trends, technological innovations, or evolving business models. Fourth, although MAXQDA-assisted thematic analysis provided a strong qualitative foundation, the study lacks econometric modeling, statistical validation, or large-scale simulation techniques, which could enhance the predictive capabilities of platform competitiveness. Finally, the scope of regulatory and institutional influences on digital platform competition remains limited, warranting deeper analysis of policy frameworks and competitive regulations in future studies.

5.8. Future Research Directions

Given these limitations, several promising avenues for future research emerge to deepen insights into digital platform competition in the sports goods market. First, quantitative empirical studies incorporating market concentration indices, price elasticity models, and network effect simulations could complement the qualitative findings, providing a data-driven perspective on competitive dynamics. Second, comparative case studies evaluating different platform business models, such as subscription-based vs. transaction-based digital marketplaces, could offer nuanced insights into competitive strategies and success determinants. Third, further exploration into emerging technologies—including artificial intelligence, blockchain, and augmented reality—could refine SCP framework applications in the digital era, as these technologies play a pivotal role in platform innovation, personalization, and competitive decision-making.

Fourth, longitudinal studies tracking the evolution of digital platforms over time could enhance our understanding of firms' adaptive strategies in response to changing regulations, consumer preferences, and technological shifts. Additionally, meta-analytical studies synthesizing prior SCP-based research could help unify fragmented insights and establish a robust theoretical foundation for understanding platform economics within the sports goods industry. By pursuing these directions, researchers and industry professionals can expand theoretical and empirical applications of the SCP model, ensuring a more comprehensive and dynamic assessment of digital platform competition.

Authors' Contributions

M.M. conceptualizing the study, designing the research method, and overseeing the overall implementation of the study. He also conducted semi-structured interviews in the qualitative phase. H.B., the corresponding author, led the data analysis of the thematic analysis method, interpreted the results, and led in drafting and revising the manuscript. R.A helped with data extraction and qualitative data analysis using MAXQDA software and supported the synthesis of findings. A.D. provided critical insights on the SCP pattern analysis in the digital platform competition of the sporting goods market, contributed to the literature review, and contributed to the discussion of the implications of the findings. All authors participated in the debate on the findings, reviewed the manuscript for important intellectual content, and approved the final version for publication.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethics Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

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