



Research article

Transforming youth sports team performance in the Era of digitalization: The Interplay of charismatic leadership, satisfaction, and team engagement drivers

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ABSTRACT

In sports, teamwork plays an vital role in improving performance. It makes the individuals nurture an environment of team dynamics, acquaintance, and instructor support. It collaboratively synergizes a team's satisfaction and performance, and thereby its ability to achieve global success. This study examines how charismatic leadership affects team performance in the context of digitalization, focusing on employee satisfaction and team engagement. A survey of 409 participants from the sports industry was conducted to assess their perceptions of leadership style, satisfaction, and engagement. Using a Likert scale, the survey identified correlations between charismatic leadership and key team outcomes. The analysis demonstrates the significant impact of charismatic leadership on enhancing satisfaction and driving team engagement, offering valuable insights for leaders aiming to boost team performance in a digitally transformed workplace.

1. Introduction

One of the prime goals of leaders in various fields is to encourage teamwork. In modern society, organizations work on their team performance by enhancing teamwork. Team sports are rich activities in which individuals interact and collaborate, thus influencing the team's performance. In sports, different individuals join to form a group. Team players working in groups coordinate and support each other with their strong skill sets and expertise. In the workplace, team members can assist an organization to achieve its business goals. The role of teamwork in sports organizations is thus relevant to the role of teamwork in modern workplaces [1].

Team performance is defined as the extent to which the team accomplishes its objectives [2]. Each team has the potential to rise and gain success, a narrative that is generally only applied to elite sports. Radke and Orchard [3] show that besides the prominence of sports teams today, the sports environment poses challenges for teams due to the traditional structuring of coaching. This limits team resources, thus raising questions about sports performance outcomes [4]. As sports are a popular and commercially attractive aspect of globalized societies, understanding how successful sports teams operate and the consequences for modern workplaces has piqued the interest of researchers and scholars worldwide.

The concept of teamwork, which is highly valued in sports, has been gaining increasing importance [5] in China [5]. The Chinese

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culture of recent times has enabled teams to enter a golden period of rapid growth [6], which has today fully elevated the opportunity to succeed in sports. Chinese communities, widely recognized for their ancient history, play sports in various forms. The Chinese social structure allows for the undertaking of diverse sports activities, with the development of a strong team ethos over time. Chinese sports teams have gained recognition for their unique skill sets and performances worldwide. But besides this respect, there remains a gap in understanding teamwork in the sports industry, particularly in the context of China [4]. Following this, this current study aims to overcome this gap by examining the key factors (i.e., team dynamics, acquaintance, instructor support, teamwork satisfaction, and charismatic leadership) that affect the performance of Chinese sports teams.

Individuals within sports teams are self-organized and enthusiastic to achieve their target, and exhibit superior team performance based on their knowledge and skill set. Sports teams work to collaborate, share knowledge, resources, and skill sets. The team dynamics conceptualizing these notions encourage team members to exchange experiences and resources [7] that promote team performance [8]. Also, Kurdi et al. [9] show that team acquaintance—the individual level of connection and communication [10]—also improves the team's performance and satisfaction. Maintaining and achieving high team performance requires the team's members to establish an important interpersonal collaboration network that plays a critical part in promoting their efforts. Teams build profound associations to fulfill their need for collaboration and support. In the realm of sports, this fuels the team's productivity and performance [11]. By promoting social belonging, as McCall et al. [12] demonstrate, instructors' support also prioritizes positive performance outcomes. Instructor support provided by the team mentors, coaches, and trainers is an influencing guide toward achieving team performance [13]. Global teams delivering value to the leaders show the importance of group effort. In a diverse sports setting, the instructor's support provides guidance, motivation, and resources, thus fostering team development and satisfaction [14].

This illustrates how teamwork satisfaction and performance in sports go hand in hand. Teamwork satisfaction involves understanding the individual perspective of team coordination and dynamics [15]. Stewart et al. [16] suggest that team members who experience satisfaction tend to perform better. Teamwork satisfaction arises due to effective communication, collaboration, and leadership. The leaders are the critical agents in satisfying the needs of the team members [17]. They lead the players to pay more attention to the team's performance.

Nguyen et al. [18] show that charismatic leaders have a wide influence on team members. Charismatic leaders play a critical role in inspiring the teams to shape their values, beliefs, and attitudes that strengthen the team's performance [19]. The charismatic leaders articulate and guide the teams to achieve a shared vision. They instill trust in individuals and help them grow by meeting performance expectations [20]. However, besides the critical role of charismatic leaders in sports performance, Eman et al. [21] reveal that we still lack an understanding of these factors on team performance concerning Chinese sports teams. Significantly, this state-of-the-art problem encourages us to develop a model that can help to understand the dynamics of these relationships.

The research explores two key questions in Chinese sports. The first question examines how team dynamics, acquaintance among members, and instructor support influence team performance, focusing on mutual trust, communication, and guidance. The second question investigates the extent to which teamwork satisfaction mediates, and charismatic leadership moderates, the relationship between these factors and team performance.

The prime objective of the current study is to explore the factors that influence team performance in the light of Social Exchange Theory and Team Dynamic Theory. The study adds to the previous literature by shedding light on the measures of team performance. By addressing the research questions, the study provides a comprehensive understanding of Team Dynamics, Acquaintance, and Instructor Support on Team Performance. Also, it presents a holistic view of Teamwork Satisfaction and Charismatic Leadership as mediators and moderators. Hackfort and Schinke [22] and Hundito [23] show that numerous studies have academically explained team satisfaction as a spate construct, but very few studies focused on the composition of the group performance in the sport. In this regard, the current work is of great value as it sheds light on the key factors that enhance the individual's understanding of sports teamwork satisfaction under the mediated moderated model, which is the uniqueness of our study. Also, this study sheds light on the three key components of team performance, thus suggesting several implications for theory and practices. Theoretically, by addressing the research gap and providing a comprehensive understanding of the functions and outcome of the team dynamic, acquaintance, and instructor support, this study functions as a guideline to promote team performance.

2. Literature review and theoretical Underpinning

2.1. Social Exchange Theory and Team Dynamic Theory

This study utilizes the social exchange and team dynamic theory to develop the framework. Under these models, the current investigation explores team dynamics, acquaintance, instructor support, teamwork satisfaction, charismatic leadership, and team performance. This theory provides individuals with a clear understanding of effective teamwork, promoting mutual benefits and potential in sports. It offers insight into social relationships, team dynamics, and leadership. Social exchange theory states that individuals engage in relationships to gain benefit [24]. With that, it sheds light on the dynamics of the interpersonal relationship between leaders-followers and teams and highlights the significance of team performance [25]. In the team context, this theory suggests that team members build strong communication skills and bonds to benefit from team performance [26].

This study also adopts the team dynamic theory to explain the concept. The team dynamic theory sheds light on the factors that widely influence the team's functioning. It shows how group dynamics, team members' personalities, communications, and leadership shape the outcome of the teams [27]. Effective teamwork is needed to leverage collective goals. The team dynamic theory overcomes the diverse problems of teams by suggesting the concepts of trust, cohesion, shared values, communication, and leadership [28]. Hence, both theories hold paramount importance in understanding the team's performance. By considering these desired factors as

motivators of the team performance, they predict the teams' performance outcomes.

2.2. Team dynamics

Over the last few years, Chinese sports teams have achieved excellence in performance through fostering group dynamics (i.e., collaboration, communication, participation, etc.). The team dynamics referring to the group aspects make the teams work towards a common goal [29]. A team is a group of individuals who interact dynamically to achieve a common goal [30]. In sports, working in a team is a rewarding experience that makes the team members cope with the changing team dynamics. The primary object of the sports team is to exhibit superior performance [31]. González-Ponce et al. [32] explain that the team members intend to reach the performance outcomes by building an environment for collaboration, support, and communication. With that, Hancock et al. [33] suggest that these establishments not only improve the team's performance but also elevate the team's satisfaction.

The members' satisfaction within the team is essential for keeping individuals motivated. McEwan [34] shows that a high level of team satisfaction leads to a better retention rate, as the individual is more likely to feel contented with the team dynamics. This stability within the team contributes to gaining higher player satisfaction. When the sports team players feel supported, fulfilled, and valued, they foster a positive environment where communication flows freely, trust is established, and goals are achieved. The grateful climate of sports teams culturally shaped the perception of the team members who collectively work towards expected goals and beliefs [35]. This collective ownership of team goals makes the teams united, thus raising their sense of satisfaction and achievement [23]. In particular, the literature concludes that the elements of team dynamics road to an enhanced level of team performance and satisfaction, thereby making us record the following hypotheses.

H1. Team dynamics has a positive effect on team performance.

H1a. Team dynamics has a positive effect on teamwork satisfaction.

2.3. Team acquaintance

Team acquaintance enables the group members to build a strong social relationship and communication. The acquaintance fosters effective communication and familiarity among the individuals. Communication makes the members get acquainted with others through the achievement of common goals [36]. In the sports, the team acquaintance enhances the individual's willingness to accomplish the task. It keeps the team members socially engaged in the activities that raise the team's development [37]. This team associate enables the group members to combine their efforts toward increasing the team's efficiency and performance. When players feel connected, they feel the synergy that leads to their on-field success. According to Shen et al. [38], this team acquaintance generates a feeling of closeness and trust that makes the members achieve high performance and satisfaction. When the team members stay related, they sense a feeling of satisfaction [39], which is paramount to achieving the collective team's success.

In sports, the nature and quality of the team interaction influence the athletes' emotional processes [40]. The social connection enhances the intrapersonal emotional bond among the teammates. It makes the team feel supported and better equipped [41]. In particular, the team contentment is closely related to team communication and collaboration. A robust communication network contributes to enhanced team satisfaction. The team prioritizing open dialogues, communication, and feedback creates a deep connection of belongingness among the team. This makes the team members share the knowledge that most likely enhances the team experiences and satisfaction [33]. Hence, based on this view of team acquaintance, the prior literature sheds light on the notion of the team's satisfaction.

In this regard, based on Nguyen et al.'s [18] view of team acquaintance, we propose.

H2. Team acquaintance has a positive effect on team performance.

H2a. Team acquaintance has a positive effect on teamwork satisfaction.

2.4. Instructor support

An effective communication, exchange of ideas, and unconditional care bring improvement in each athlete's performance [42]. Apart from the significant efforts made by the team members, the instructor's support plays a fundamental role in improving sports performance. In a sports club, good coaching is profoundly needed for success. The role of the instructor is to support the development and performance of the athletes [43]. The instructor's support is crucial to guide the team players and their supervision fosters the learning environment for individuals [44]. They enhance team collaboration, which yields benefits for teams by capitalizing on the team's performance. The instructor sets clear expectations and offers constructive feedback to the team members, thus improving their skills and performance [45]. This support helps teammates embrace challenges, which leads team members to strive for continuous improvements [46]. The coach's feedback during challenges creates a positive attitude in individuals, which allows them to better understand group dynamics. The coach's dynamic competencies, influence, and support allows the team to perform their best in a competitive environment [47].

Nurturing the team environment demands genuine care, empathy, and investment. Instructors, serving as pillars of constant support, guidance, encouragement, and mentorship [48], navigate the team challenges with their effective training capabilities that have a profound effect on the team's satisfaction. As coaches allow the team to achieve higher targets with their training experience, the team members are more likely to be satisfied and committed to the organizational goals [49]. The coach's successful development

capabilities extend beyond just supporting the team members with their technical guidance to improve the team's satisfaction. Their mentorship capabilities lay the foundation of team satisfaction and are a product of the instructor's constructive feedback, emotional support, and guidance [50]. Altogether, the prior literature shows that in sports, the instructor's friendly attitude, emotional assistance, and coaching guidance make the players feel satisfied and fulfilled [51]. Indeed, based on this view, we propose.

H3. Instructor support has a positive effect on team performance.

H3a. Instructor support has a positive effect on teamwork satisfaction.

2.5. Teamwork satisfaction as a mediating variable

Many teams fail at large if they do not carry out strategies that boost the team's satisfaction. Critical to achieving success, teamwork satisfaction reflects how an individual feels in performing the work task [15]. Satisfied individuals are often happier and more fulfilled than others [52]. Attaining success demands that the team exhibits superior team performance. Concerning this, Hut et al. [53] show that teamwork satisfaction plays an integral role in strengthening the team's overall performance. Teammates creating a fertile ground for collective efforts and excellence on the field reflects their commitment to perform their best. In sports, teamwork satisfaction significantly heightens team performance while channeling the opportunities that propel teams toward excellence and perfection [16]. Hence, in line with this argument, we propose.

H4. Teamwork satisfaction has a positive effect on team performance.

Sport is an activity that demands overcoming challenges with effective team performance. The key to a productive team is cohesiveness, collaboration, and communication. For the team to comprehend its goals, it must perform effectively on these constructs [54]. Team dynamics evolved based on these constructs bring benefits to the sports organizations. The team dynamics, enhancing the team's satisfaction, enable the players to achieve superior goals and performance targets [55]. The team dynamics make the individuals dynamically respond to the challenges they face with determination and teamwork. In this way, a satisfied team prioritizes collaboration and open communication to better equip each teammate with superior abilities and skills [23]. Team dynamics that facilitate team engagement and communication [56] reduce the turnover rate while increasing individual morale and satisfaction. González-Ponce et al. [32] show that teamwork satisfaction serving as the motivating factor is perceived to be achieved with strong group dynamics (i.e., collaboration, communication, participation, etc.). This demonstrates that team dynamics is an important pillar to enhance a team's satisfaction and, ultimately, its performance [57].

However, in the ever-changing world of sports, where adversity often impacts the team's confidence and satisfaction, team acquaintance also plays a significant role in achieving team performance [58]. This team acquaintance enables the group members to combine their efforts to achieve efficiency and effectiveness [59]. In sports, team acquaintance enhances the team's performance. It increases each individual's willingness to accomplish the task. This keeps the team members socially engaged in the activities that enhance the team's development and satisfaction [37]. The social interaction taking place among team members leads to self-control and satisfaction [60]. This group satisfaction channeled by this social connection progressively contributes to the team's performance. Yang et al. [39] show that sports activities stimulating high social interactions create a positive effect on team satisfaction and performance.

In particular, the team culture formed between the team coach and members builds the relationships among individuals. This emerging collaboration possesses a strong influence on team participation, performance, and satisfaction [61]. Leaders ensure team participation with their valuable expertise concerning support and communication. The players receiving the support experience a sense of satisfaction [62] that improves the team's overall performance. The instructor's support enables the sports team to form meaningful connections that make individuals feel fulfilled, which results in superior team performance [63]. Playing an essential role in team performance, the instructor's advanced capabilities, supporting behavior, and communication strengthen team satisfaction, which maximizes team efficiency [64]. A team coach who is a good communicator promotes open dialogue while sharing the issues and concerns of team members, which leads to team satisfaction [65]. When the leader develops effective communication qualities, they tend to boost the team morale, which generates important implications for the team's satisfaction and performance. Indeed, this shows that instructor-given assistance benefits the team while converting their contribution into consideration. Therefore, in line with the above argument, we propose.

H4a. Teamwork satisfaction mediates the relationship between team dynamics and team performance.

H4b. Teamwork satisfaction mediates the relationship between team acquaintance and team performance.

H4c. Teamwork satisfaction mediates the relationship between instructor support and team performance.

2.6. The moderating role of charismatic leadership

An organization needs to have a healthy competitive environment in which team members can interact supportively. In sports, charismatic leaders play a strategic role in establishing a personal environment of support, respect, and appreciation [66]. A leader's ability to impress the team creates an atmosphere of respect and collaboration, which strengthens the firm's performance [67] and satisfaction. Charismatic leaders foster an environment where the team members work together and promote behaviors that make them more effective. By inspiring the players, they enhance the player's experiences, especially under pressure. Sport psychology

demands high motivation and satisfaction to upgrade the team performance. Charismatic leaders operationalize the enthusiasm required for this in individuals through their charming personalities. They raise the team satisfaction that maximizes the team efficiency (i.e., performance). Charismatic leaders in sports settings craft their coaching style to gain team satisfaction [68]. With their attractive abilities and skills, charismatic leaders help the players gain the feeling of satisfaction that influences their team performance. Team members functioning under the guidance of charismatic leaders have high hopes of reaching the common goal. Charismatic leaders assist individuals to feel confident about the group dynamics, which increases their satisfaction and performance level. Therefore, winning the league requires the influence of charismatic leaders [21]. Hence, in line with the above argument, we propose.

H5. Charismatic leadership moderates or strengthens the relationship between teamwork satisfaction and team performance.

The conceptual model illustrates how team dynamics, team acquaintance, and instructor support directly and indirectly affect teamwork satisfaction and team performance. In Fig. 1, Hypotheses (H1 to H5) delineate these relationships, showcasing the influence pathways between the factors.

3. Methodology

This study focuses on members of various youth sports teams across different disciplines and levels. A convenience sampling method was utilized to recruit participants from sports teams. This method was chosen for its ease of access to potential participants within the sports community. A total of 409 participants from different sports teams were included in the study to ensure a diverse representation of athletes and sports disciplines. Participants were selected from a range of sports teams through collaboration with team coaches and administrators. Each participant was invited to voluntarily complete a questionnaire that focused on various aspects related to their sport and performance. The study ensured that participation was voluntary, and informed consent was obtained from each participant prior to completing the questionnaire. Participants were assured of the confidentiality and anonymous reporting of their responses. All the study measurement items are mentioned in Appendix 1. Harman’s single-factor approach was used to examine the common method bias in this study. There is no common method bias in this study, as the variance extracted using one factor is 13.395 %, less than 50 % [69].

In terms of gender distribution, 55.7 % were male (228 participants) while 44.3 % were female (181 participants). Regarding age demographics, the majority of participants fell within the age ranges of 22–27, with 29.6 % aged 22–25, 35.2 % aged 26–27, and 13.4 % aged 27–30. In relation to education levels, the participants were divided into categories: 28.6 % held a Bachelor’s degree (117 participants), 39.9 % had a Master’s degree (163 participants), 13.4 % had technical qualifications (55 participants), and the remaining 18.1 % fell into the "Others" category (74 participants).

4. Analysis and results

Table 1 shows the reliability analysis for six constructs. The results indicate high internal consistency, with all constructs meeting or exceeding common thresholds for Cronbach’s alpha, composite reliability (CR), and average variance extracted (AVE). Team

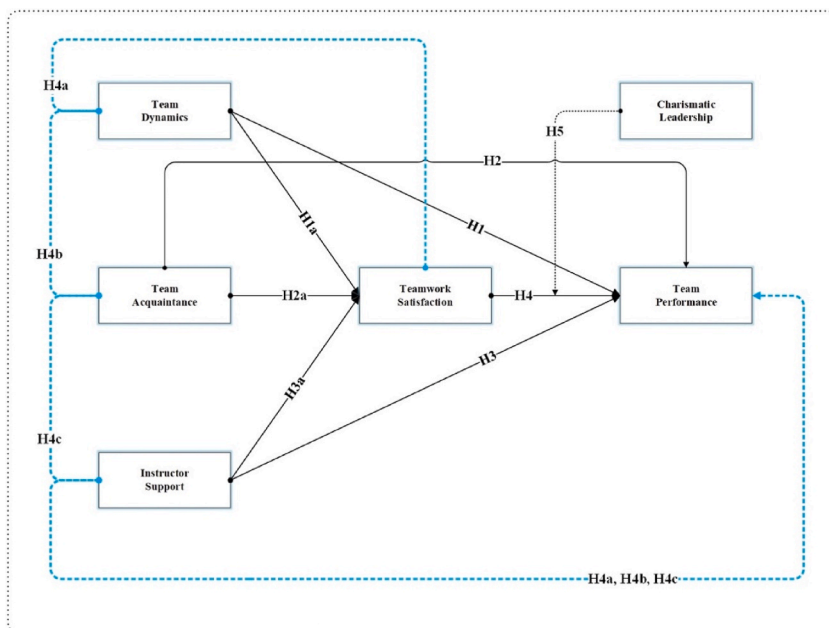


Fig. 1. Study research model.

Dynamics has eleven items with loadings between 0.746 and 0.800, a Cronbach’s alpha of 0.938, a CR of 0.946, and an AVE of 0.595. Team Acquaintance includes four items with loadings ranging from 0.811 to 0.837, a Cronbach’s alpha of 0.846, a CR of 0.897, and an AVE of 0.685. Instructor Support, consisting of three items with loadings between 0.822 and 0.844, has a Cronbach’s alpha of 0.784, a CR of 0.874, and an AVE of 0.698.

Teamwork Satisfaction has ten items with loadings from 0.751 to 0.795. It has a Cronbach’s alpha of 0.926, a CR of 0.938, and an AVE of 0.601. Charismatic Leadership, with eight items and loadings from 0.679 to 0.765, shows a Cronbach’s alpha of 0.875, a CR of 0.898, and an AVE of 0.524. Finally, Team Performance, comprising two items with loadings of 0.899 and 0.910, has a Cronbach’s alpha of 0.777, a CR of 0.900, and an AVE of 0.818.

Table 2 displays the Fornel-Larcker and Heterotrait-Monotrait ratio (HTMT) analysis for charismatic leadership (CL), instructor support (IS), team acquaintance (TA), team dynamics (TD), team performance (TP), and teamwork satisfaction (TS). Team acquaintance correlates with instructor support (0.627) and teamwork satisfaction (0.609).

Fig. 2 provides an overview of the measurement model assessment, focusing on key aspects like construct reliability, discriminant validity, and model fit. This figure serves as a comprehensive check for the reliability and validity of the measurement model in structural equation modeling (SEM).

Table 3 presents the results of hypotheses testing for direct relationships in a structural equation model, focusing on the standardized beta values, standard errors, and t-values for each hypothesis. There is a significant positive correlation between Team Dynamics (TD) and Team Performance (TP), with a standardized beta of 0.145 and a t-value of 2.383, indicating a positive relationship between the two variables (H1). The direct effect of team dynamics on teamwork satisfaction has a higher beta of 0.353 and a t-value of 6.095, indicating a stronger relationship(H1a). Team acquaintance shows a significant positive effect on team performance, with a beta of 0.181 and a t-value of 2.550 (H2). The relationship between team acquaintance and teamwork satisfaction also has a moderate beta of 0.219 and a t-value of 4.539, showing a meaningful impact (H2a).

Instructor support has a smaller yet significant effect on team performance, with a beta of 0.128 and a t-value of 2.578 (H3). Instructor support has a more substantial effect on teamwork satisfaction, with a beta of 0.238 and a t-value of 4.877 (H3a). Finally, the

Table 1
Reliability and validity analysis.

Variables	Measurement Items	Factor Loading	Cronbach’s alpha	CR	AVE
Team Dynamics	TD_1	0.800	0.938	0.946	0.595
	TD_12	0.759			
	TD_2	0.753			
	TD_3	0.778			
	TD_4	0.762			
	TD_5	0.784			
	TD_6	0.758			
	TD_7	0.750			
	TD_8	0.782			
	TD_9	0.787			
	TD_10	0.746			
Team Acquaintance	TA_1	0.826	0.846	0.897	0.685
	TA_2	0.811			
	TA_3	0.835			
	TA_4	0.837			
Instructor Support	IS_1	0.822	0.784	0.874	0.698
	IS_2	0.844			
	IS_3	0.839			
Teamwork Satisfaction	TS_1	0.759	0.926	0.938	0.601
	TS_2	0.773			
	TS_3	0.774			
	TS_4	0.795			
	TS_5	0.751			
	TS_6	0.786			
	TS_7	0.782			
	TS_8	0.780			
	TS_9	0.765			
	TS_10	0.789			
Charismatic Leadership	CL_1	0.702	0.875	0.898	0.524
	CL_2	0.759			
	CL_3	0.681			
	CL_4	0.701			
	CL_5	0.761			
	CL_6	0.735			
	CL_7	0.765			
	CL_8	0.679			
Team Performance	TP_1	0.910	0.777	0.900	0.818
	TP_2	0.899			

Table 2
Fornel Larcker and discriminant validity (HTMT) analysis.

Constructs	1	2	3	4	5	6
1. Charismatic Leadership	0.724	0.140	0.147	0.138	0.136	0.127
2. Instructor Support	-0.112	0.835	0.627	0.659	0.596	0.643
3. Team Acquaintance	-0.128	0.513	0.827	0.637	0.613	0.609
4. Team Dynamics	-0.133	0.566	0.569	0.771	0.593	0.654
5. Team Performance	-0.128	0.465	0.499	0.507	0.904	0.552
6. Teamwork Satisfaction	0.114	0.550	0.541	0.612	0.469	0.775

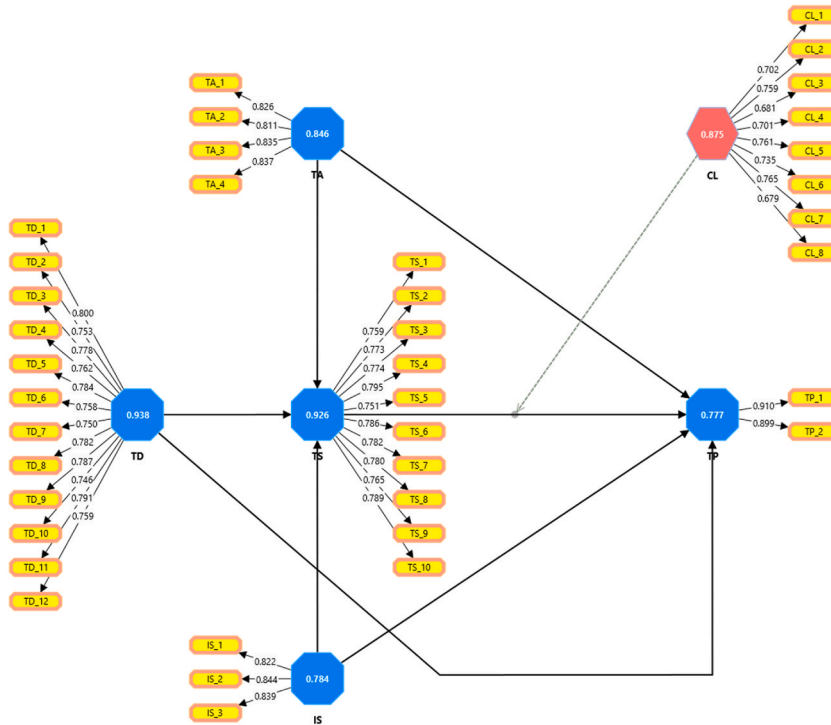


Fig. 2. Measurement model assessment.

Table 3
Direct effect- hypotheses testing.

Hypothesis	Direct Relationships	Std. Beta	Std. Error	T- Values
H1	TD → TP	0.145	0.061	2.383
H1a	TD → TS	0.353	0.058	6.095
H2	TA → TP	0.181	0.071	2.550
H2a	TA → TS	0.219	0.048	4.539
H3	IS → TP	0.128	0.050	2.578
H3a	IS → TS	0.238	0.049	4.877
H4	TS → TP	0.250	0.074	3.363

TD = Team Dynamics; TP= Team Performance; TS= Teamwork Satisfaction; TA = Team Acquaintance IS= Instructor Support.

Table 4
Hypotheses testing mediation effect.

Hypothesis	Direct Relationships	Beta Value	Standard Error	T- Values
H4a	TD → TS → TP	0.088	0.030	2.908
H4b	TA → TS → TP	0.055	0.021	2.594
H4c	IS → TS → TP	0.059	0.024	2.474

direct effect of teamwork satisfaction on team performance has a beta of 0.250 and a t-value of 3.363, confirming a moderate positive relationship (H4). These results suggest that each hypothesis reveals significant direct relationships, with varying levels of impact on team performance and teamwork satisfaction.

Table 4 presents the results of hypotheses testing for mediation effects, focusing on teamwork satisfaction as a mediator in the relationships between team dynamics, team acquaintance, instructor support, and team performance. The standardized beta values, standard errors, and t-values indicate the significance of each mediation effect. The mediation effect of TS between TD and TP (H4a) has a standardized beta of 0.088 and a t-value of 2.908, suggesting a significant mediation. The mediation of TS between TA and TP (H4b) has a beta of 0.055 and a t-value of 2.594, indicating a significant but smaller effect. Lastly, TS mediates between IS and TP (H4c) shows a beta of 0.059 and a t-value of 2.474. These results confirm that teamwork satisfaction significantly mediates the relationships between team dynamics, team acquaintance, instructor support, and team performance, with varying degrees of influence. Fig. 3 shows the results of structural model.

Table 5 displays the results of testing a moderation hypothesis, focusing on the interaction between Charismatic Leadership (CL) and Teamwork Satisfaction (TS) in affecting Team Performance (TP). Hypothesis H5 examines this interaction has a standardized beta of 0.107, with a t-value of 3.665 and a significance level of $***p < 0.001$. This indicates a significant positive moderation effect. The impact of different levels of the moderator (TS) is also analyzed. At +1 standard deviation, the standardized beta is 0.732, suggesting a strong effect. At the mean level, the beta is 0.538, and at -1 standard deviation, the beta is 0.344, indicating a weaker effect. These findings suggest that the interaction between charismatic leadership and teamwork satisfaction has a significant impact on team performance, with stronger effects observed at higher levels of teamwork satisfaction (Fig. 4). R² and F² analysis results are presented in Fig. 5.

5. Discussion

Practiced worldwide, sports are essentially recognized to hold instrumental value. The increased competitive nature of sports on both the national and international levels demands effective teamwork. In China, people have sufficient leisure time to participate in games. Hence, this has made Chinese sports teams gain significant importance [5]. Sports teams play a critical role in achieving business success for sporting organizations. A successful team performance is crucial to every sport. There is a genius consensus that sports demand highly cohesive teams to improve team performance [30]. In the pursuit of a successful team outcome, today, sports organizations aim to optimize performance in diverse contexts. Several group dynamics are integral to achieving sports performance. Group dynamics elevating individual communication, participation, and collaboration help the team achieve their performance outcome [70]. Team dynamics work as a building block that enables the team members to achieve superior team performance [71]. Given this, team dynamics also create an environment where each individual feels satisfied and fulfilled [30]. As such, athletes are often supported by their team dynamics, and this aspect strengthens the team’s success. The current study demonstrates the positive

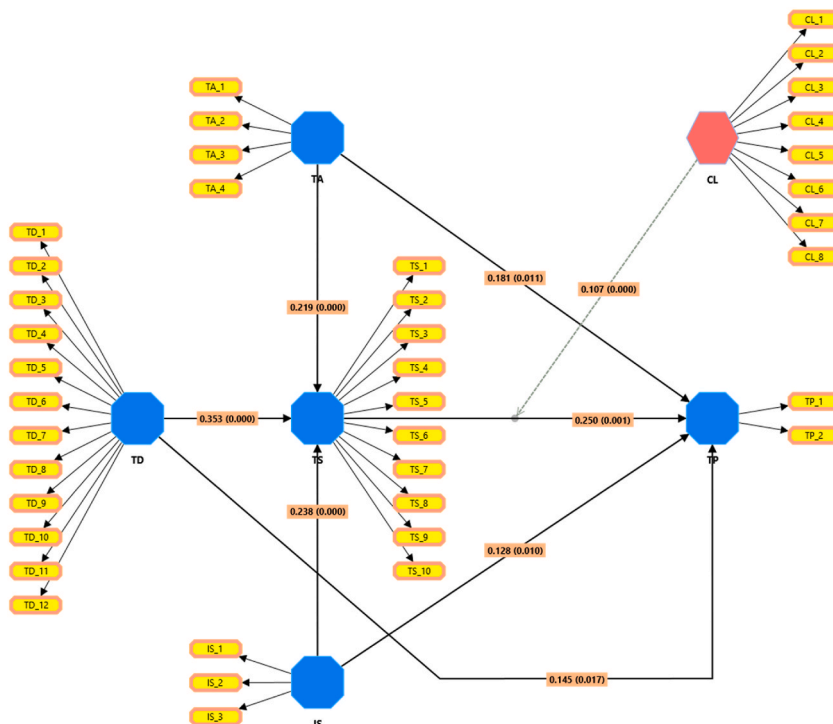


Fig. 3. Structural model.

Table 5
Moderation hypothesis.

Hypothesis	Interaction Effect	Standard Beta	Standard Error	T- Values	P- Values
H5	CL → TS → TP	0.107	0.029	3.665	***
Level of the Moderator		Standard Beta	Standard Error	Lower Bound	Upper Bound
	+1 Standard Deviation	0.732	0.057	0.620	0.844
	Mean	0.538	0.042	0.456	0.621
	-1 Standard Deviation	0.344	0.048	0.251	0.438

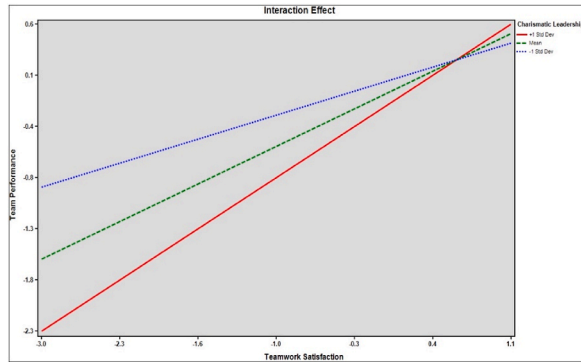


Fig. 4. Moderation analysis.

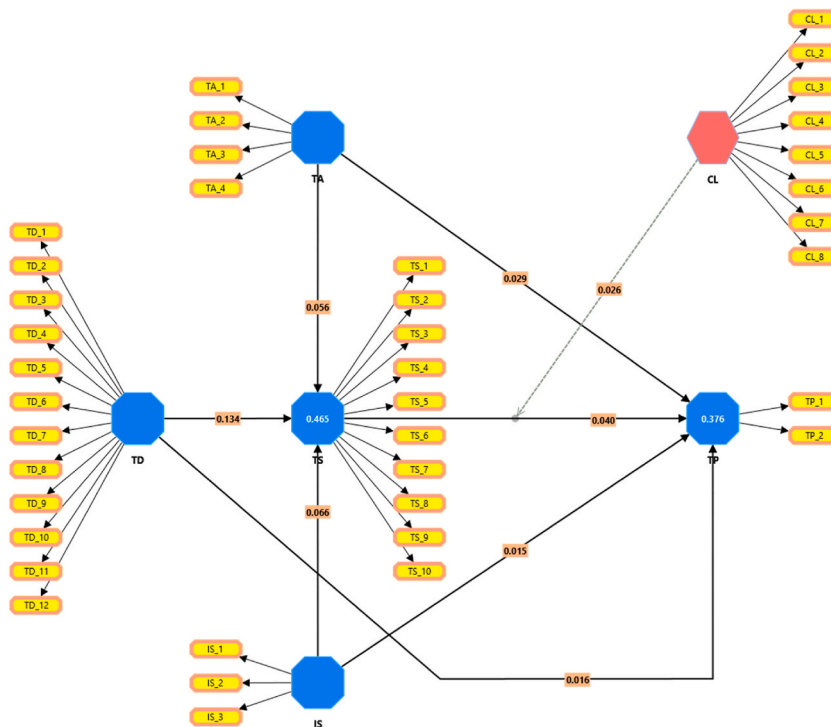


Fig. 5. R² and F² analysis.

effect of team dynamics on team performance and satisfaction. In summary, team dynamics is the heart of successful teams. As the backbone of strong team performance, the study reveals that team dynamics make each member satisfied and contented with the positive group results (i.e., H1 and H1a).

In sports, team members also intend to function [29] to cultivate a sense of connection among themselves. A team’s ability to

perform is closely related to the strength of its acquaintanceship, which refers to interpersonal relationships, conflict resolution, and communication [72]. In sports, it is essential to promote social interaction to increase the team's participation. Team acquaintance makes team members strive for excellence [73]. Social engagement and interaction inspire the individual to reach their full potential within the team setting. A sense of social belonging also leads to teamwork satisfaction that encourages players to achieve their goals even in times of difficulty (i.e., H2 and H2a). A greater sense of satisfaction promotes fulfillment in individuals. As the core of fulfillment lies in belongingness, team acquaintance plays a significant role in boosting teamwork satisfaction and performance [9].

Similarly, our study supports the prior literature and shows that instructor support is another instrumental factor that provides team members with the confidence to perform their best [74]. The instructor facilitates the establishment of a culture of performance outcomes, which demonstrates their crucial role in safeguarding and recognizing each team member's need for support and assistance. This connection collectively makes instructors responsible for guiding each athlete's training [75]. Instructors provide knowledge, training, and resources to the team members, which are necessary for maximizing the team's performance [76] and teamwork satisfaction. With that, the instructor's coaching, prioritizing open dialogues, active listening, and transparency develop an environment where individuals feel valued and heard. An environment of aspiration strengthens mutual respect, thus cultivating a sense of satisfaction in individuals [77]. By offering advanced expertise and feedback, instructors help team members to navigate the challenges that arise. This assistance motivates team members, thus allowing them to perform to their potential best [47]. Therefore, in line with this argument, our study supports H3 and H3a, confirming that sports teams represent a dynamic ecosystem of success that is not the product of the sole individuals but a collaborative endeavor.

In the same vein, our study shows that teamwork satisfaction, serving as a cornerstone for success in sports, has a profound effect on team performance [16]. Teamwork satisfaction plays an integral role in increasing team efficiency and effectiveness. Teamwork satisfaction builds the relationship between team dynamics and team performance through the establishment of common goals, beliefs, and norms. According to our study, good team dynamics contribute to improved performance and satisfaction among teams [33]. Positive team dynamics cultivate a supportive environment, which makes the individual feel motivated toward the performance goal [78]. Therefore, it is important to understand that team dynamics can make or break a team. Notably, whether it is a sport or any other type of professional team, the development of team dynamics has importance in every aspect [79]. With that, this study also shows that fostering group dynamics and promoting social interaction is intricately linked with team performance and achievement. In this regard, González-Hernández et al. [58] explain that teams reinforcing strong bonds and instructor support [12] improve team performance. Instructor support plays a pivotal role in enhancing the player's satisfaction by recognizing the team's progress and creating an encouraging environment, which boosts team members' morale and belongingness and, ultimately, their satisfaction and performance [19]. In line with this, our study also supports Fornari et al.'s [80] findings indicating that charismatic leaders have a significant influence on the team's satisfaction and performance. Charismatic leadership is a well-established concept in sports that is critical to athletes' satisfaction and performance [66]. Altogether, through strong findings regarding these concepts, our study confirms the positive mediating effect of teamwork satisfaction and the moderating role of charismatic leadership on team performance H4 (a, b, c) and H5.

Accordingly, the present research concludes that these multiple and divergent concepts of teamwork enhance team performance and satisfaction. All of these factors facilitating teamwork performance foster a culture of development and fulfillment in sports individuals. In particular, the study hypotheses were found to be positively embraced and accepted.

5.1. Theoretical contribution and practical implications

The present study suggests several theoretical implications and contributes significantly to the sports literature. It addresses the research gap by proposing a multidimensional theoretical framework and shedding light on significant factors, such as team dynamics, acquaintance, and instructor support, by revealing their influence on the team performance. As the role of team dynamics, acquaintance, and instructor support has not been investigated at length before, this study provides a novel and holistic view of these factors by including diverse opinions on this topic. The current study is a unique one that explores the contributions of these elements from the perspective of sports teamwork satisfaction and charismatic leadership (i.e., mediated moderated model), which is also the novelty of our study.

Hence, from the theoretical perspective, future researchers can continue to add to this body of knowledge. Through a conceptual lens, it recommends that future scholars present a greater understanding of the multidimensional nature of team performance in different sports. Future studies should investigate more factors to draw a more comprehensive picture and enrich the sports literature while addressing the shortcomings of the current study. Altogether, this paper calls for more theoretical and comprehensive hypotheses of team performance for practitioners and policymakers.

The current study's findings exploring the significance of team performance under the social exchange and team dynamic theory hold substantial importance for sports. The study findings showed how players' performance is improved with group dynamics, acquaintance, and instructor support. However, the key way to grasp the importance of these findings is to delve into their practical applicability concerning these factors. Sports in China comprise different teams, each with different identities, characteristics, scopes, schedules, etc. Indeed, these distinctive aspects make this study hold paramount importance in today's competitive environment and reflect the novelty of this study's findings within the literature. From the practical perspective, this examination at the team level is relevant for policymakers, institutions, governments, and leaders who widely organize and manage teams, whether that is in a sports or workplace setting. The results suggest that managers and coaches should recognize the potential of the teammates. It advises them to elevate the benefits of their team's dynamics and acquaintance in the group composition to gain teamwork satisfaction.

Moreover, the study encourages leaders to design strategies to promote high-quality performance and satisfaction among their

team members. It suggests that they should train their team members and develop training programs and teamwork skills to maximize team performance. Furthermore, supervisors should adopt charismatic behaviors to enhance teamwork satisfaction and performance. With that, it also suggests governments to take steps to promote knowledge on teamwork in all aspects. Similarly, policymakers can be guided by these findings in the process of developing policies related to teamwork satisfaction and performance.

Indeed, understanding these interactions provides a valuable understanding of teams' functioning and dynamics. By delving deeper into the research topic, strategies for enhancing team dynamics, acquaintance, instructor support, etc., that can lead to team performance can be uncovered.

6. Conclusion

Teamwork, serving as a real-life model for various sports, is now taken for granted. Teamwork is the fundamental element of empowering teams and achieving superior team performance. However, in sports, putting together a team of highly skilled players does not guarantee a championship. It is working in synergy that allows teammates to meet optimal performance standards.

The significance of this study is apparent through its contribution to the previous literature concerning sports teams. Team satisfaction and performance hold a significant place in the literature. In particular, the existing literature considers the role of teamwork satisfaction and charismatic leadership while uncovering factors like intricate group dynamics, team acquaintance, and instructor support that impact on team satisfaction and performance.

In particular, our novel study combined the findings of these previous studies with new insight to gain a wider understanding of the relationship between the variables. The current study results showed the positive role of team dynamics, team acquaintance, and instructor support in performance concerning sports. With that, it confirmed the significance of teamwork satisfaction as a mediator and charismatic leadership as a moderator nexus to teamwork satisfaction and performance. By strengthening the synergies between these critical factors, teamwork guarantees a team's success. With these findings, this study delved into the practical implications for the individuals who are critical for managing team performance and project success. It made several contributions to the field of sports for individuals striving toward achieving high-performance teamwork.

6.1. Study limitation and future Direction

The study suggests several implications, but also has a few limitations. Firstly, the study's focuses on a single country (i.e., China), meaning the cultural aspects of the study results may vary in other countries (Eastern and Western). Because of this geographical limitation, our study lacks generalization. Future scholars could investigate this topic concerning different countries, both developing and developed, such as Pakistan, Romania, India, Australia, etc.

Secondly, from a practical point of view, the study also presents evidence from a specific sector (i.e., sports). Thus, to make the study findings heterogeneous, future scholars should perform this study in other sectors (e.g., health care, manufacturing, education, etc.).

Thirdly, the study provides a holistic view of sports teams. Sports in China comprise different team identities, characteristics, scopes, schedules, etc. Future researchers should specify the sports teams (e.g., soccer, volleyball, badminton) to enhance the individual understanding of this concept. This study sheds light on the role of limited factors (team dynamics, acquaintance, and instructor support) on team performance. However, as these factors are not the only drivers of a team's performance, scholars should include other variables (i.e., team efficacy, motivation, engagement) to widen the understanding of this topic. Further, while we assessed the role of charismatic leadership as a moderator, charismatic leaders are not the only individuals who influence the team's performance.

Therefore, it is recommended that future studies should include the role of transformative leadership, servant, collaborative leadership, etc., to enhance understanding of the impact of different leadership styles on team performance. We hope that these suggestions will widen the impact of future research on team performance.

Data Availability statement

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

Funding statement

No Funding received.

Informed consent

All participants gave their informed consent for inclusion before they participated in the study.

Ethical statement

All procedures performed were by the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standard. All the procedures were approved by the ethical committee of Shanxi University, Taiyuan, China.

CRedit authorship contribution statement

Yan Liqiang: Writing – original draft, Project administration, Investigation, Conceptualization. **Xiaoqing Zang:** Writing – review & editing, Software, Methodology, Investigation. **Li Dunjie:** Writing – original draft, Supervision, Funding acquisition, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix 1. Questionnaire

Sr.#	Statement
1	My team develops clear collaborative patterns to increase team learning efficiency
2	My team trusts each other and works toward the same goal
3	My team members clearly know their roles during the collaboration
4	My team sets clear goals and establishes working norms
5	My team members reply to all responses in a timely manner
6	My team members communicate with each other frequently
7	I trust each team member can complete his/her work on time
8	My team has an efficient way to track the edition of documents
9	My team is receiving feedback from each other
10	Communicating with team members regularly helps me to understand the team project better
11	My team members encourage open communication with each other
12	My team members communicate in a courteous tone
13	My team members share culture information to know each other better
14	My team members share personal information to know each other better
15	Getting to know one another in my team allows me to interact with teammates more efficiently
16	My team members share their professional expertise
17	The support from the instructor helps my team to reduce anxiety among team members
18	The instructor acts as a referee when our members cannot seem to resolve differences
19	My team is receiving guidance on the group project from the instructor
20	I have benefited from my teammates' feedback
21	My team members are sharing knowledge during the teamwork processes
22	I gain online collaboration skills from the teamwork processes
23	I have benefited from interacting with my teammates
24	Interacting with the other members can increase my motivation to learn
25	I enjoy the experience of collaborative learning with my teammates
26	I like solving problems with my teammates in group projects
27	I like working in a collaborative group with my teammates
28	Working with my team helps me produce better project quality than working individually
29	Online teamwork promotes creativity
30	Has a vision and imagination of the future
31	Emphasizes the importance of being committed to our values and beliefs
32	Foregoes self-interests and makes personal sacrifices in the interest of a goal or vision
33	Stimulates others to put forth efforts above and beyond the call of duty and make personal sacrifices
34	Displays conviction in his/her ideals, beliefs, and values
35	Shows a high degree of self-confidence
36	Sets high performance standards
37	Has strong convictions about the correctness of his or her actions
38	How well do you think your team does the assigned work?
39	What is the quality of the work performed by your team?

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