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The Soccer Pitch as a Micro-Social System: How *Mianzi* and Authority Shape Student Collaboration

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ABSTRACT

Despite the importance of team collaboration as a key 21st-century competency, many Chinese university students struggle with efficient communication and managing interpersonal conflicts. Soccer is often utilized as a strategic tool for youth socialization; however, the internal processes that translate match participation into measurable teamwork skills remain a theoretical "black box". This paper proposes a conceptual framework to decode the social-psychological mechanisms through which the soccer pitch, functioning as a micro-social system, enhances team collaboration competence. Integrating Self-Determination and Social Cognitive theories, the model identifies self-esteem, self-efficacy, and emotion regulation as core psychological mediators. Crucially, the framework positions Face Culture (Mianzi) and Authority Dependence as critical cultural moderators that shape how communication and collective decisions actually unfold under situational pressure. To empirically validate these pathways, this study outlines a proposed protocol using a Sequential Explanatory Mixed-Methods Design. Quantitative data from a stratified proportional random sample of 300–400 undergraduate students across three universities in Zhejiang Province will be evaluated using Structural Equation Modelling (SEM) to confirm structural relationships. Subsequently, semi-structured interviews with 10–15 students will undergo Reflexive Thematic Analysis to provide explanatory depth regarding on-field behavioural silence and cultural conformity. By shifting the analytical focus from macro-level fitness benefits to micro-level psychological and cultural dynamics, this paper provides a robust theoretical framework for sports socialization. Practically, it offers actionable strategies for physical educators to intentionally design team-based interventions that cultivate sustainable, real-world collaborative competencies.

Keywords: *Educational psychology, Sports sociology, Organizational behaviour, Team collaboration, Soccer participation.*

1. INTRODUCTION

In the current global knowledge economy, the core objective of higher education has expanded beyond the transmission of disciplinary knowledge to include the development of holistic, transferable competencies that prepare graduates for increasingly complex professional and social environments (UNESCO, 2021; OECD, 2019). Among these 21st-century competencies, teamwork and collaboration have emerged as essential capabilities for graduate employability, professional adaptability, and active civic participation (OECD, 2019; World Economic Forum, 2023). As contemporary workplaces increasingly rely on interdisciplinary collaboration, project-based learning, and cross-functional problem-solving, the ability to work effectively within diverse teams has become as important as technical expertise (World Economic Forum, 2023). Developmentally, the university years coincide with the period of *emerging adulthood*, during which individuals establish social identities, develop self-regulatory capacities, and acquire the

interpersonal competencies that shape their future professional and personal lives (Arnett, 2000; Arnett, 2015). Consequently, higher education institutions have an important educational responsibility to provide authentic learning environments in which students can systematically develop communication, collaboration, leadership, and conflict-management skills (OECD, 2019).

However, a substantial gap remains between these educational aspirations and the collaborative capabilities demonstrated by many university students. When engaged in highly interdependent learning environments such as project teams, laboratory groups, or co-curricular activities—students frequently experience difficulties related to communication, role negotiation, interpersonal trust, and constructive conflict resolution, all of which can reduce group effectiveness and learning outcomes (Johnson & Johnson, 2009; Salas et al., 2015). These collaborative challenges are further exacerbated by growing concerns regarding university students' mental health. The *China National Mental Health Development Report* indicates that Chinese university students experience increasing levels of psychological distress, particularly in emotion regulation, stress management, and social adaptation. Such psychosocial challenges may negatively influence both academic performance and students' capacity to engage effectively in collaborative learning environments. Consequently, developing educational settings that simultaneously foster emotional resilience and effective teamwork has become an increasingly important priority within Chinese higher education.

In response to these challenges, the Chinese Ministry of Education (MOE) has introduced a series of physical education reforms that position organized sport as an important educational vehicle for promoting students' holistic development. This policy direction is reflected in the *National Youth Campus Soccer Eight-System Construction Plan*, which explicitly identifies campus soccer as a strategic platform for cultivating teamwork, perseverance, collective responsibility, leadership, and social development among young people (Ministry of Education of the People's Republic of China, 2015).

From an educational standpoint, soccer represents an ideal context for socialization. Characterized by high levels of physical and tactical interdependence, rapid decision-making under dynamic conditions, and continuous verbal and non-verbal coordination, soccer requires individuals to subordinate personal interests in pursuit of shared team goals. Participation in team sports provides an authentic learning environment in which young people develop teamwork, communication, cooperation, leadership, and interpersonal competencies that are transferable beyond sport (Carron & Eys, 2012; Benson et al., 2016). The soccer field therefore functions as an applied social learning environment where the unwritten norms of effective teamwork—including supporting teammates after mistakes, accepting differentiated roles, communicating effectively, and regulating individual interests for collective performance must be enacted continuously during play (Benson et al., 2016; Eys & Martin, 2020). Despite these socio-pedagogical expectations underpinning national sports initiatives, existing domestic research remains only weakly connected to educational practice, leaving several important theoretical and practical gaps unresolved. These gaps can be summarized into three interrelated dimensions.

1.1.1 Practical Gap

Within contemporary university physical education in China, instructional practice continues to emphasize technical skill acquisition over the systematic development of interpersonal and collaborative competencies. Soccer instruction typically prioritizes individual technical drills, such as ball control, passing accuracy, and shooting techniques, while providing comparatively limited opportunities for students to develop communication, shared decision-making, distributed leadership, and collaborative problem-solving during game situations (Harvey & Jarrett, 2014; Kirk, 2013). Consequently, soccer is frequently experienced as an individual skill-

based activity rather than as a collaborative learning environment that intentionally cultivates teamwork and social competence.

1.1.2 Theoretical (Mechanism) Gap

Although research in sport psychology and sport sociology consistently demonstrates positive associations between participation in team sports and social competence, the underlying psychological mechanisms remain insufficiently understood (Bailey, 2006; Eime et al., 2013). Existing studies generally establish that sport participation contributes to improved social outcomes but rarely explain *how* these outcomes are achieved. In particular, limited research has examined whether participation in soccer enhances teamwork through intermediary psychological resources such as self-esteem, self-efficacy, emotional regulation, or interpersonal confidence. Consequently, the psychological pathways linking sport participation to collaborative competence remain a "black box" that warrants further empirical investigation (Bandura, 1997; Bailey et al., 2013).

1.1.3 Cultural Boundary Gap

A further limitation concerns the cultural applicability of dominant teamwork theories. Widely adopted models of team development, such as Tuckman's (1965) stages of group development, were developed primarily within Western cultural contexts that assume relatively egalitarian relationships, direct communication, and open disagreement during collaborative work. However, these assumptions may not fully reflect interaction patterns within Chinese higher education. Research on Chinese organizational and educational settings suggests that interpersonal behaviour is strongly influenced by Confucian values, including the preservation of *mianzi* (face), respect for hierarchy, and the maintenance of interpersonal harmony (Hofstede, 2001; Hwang, 1987; Earley, 1993). As a result, students may avoid openly correcting peers, suppress disagreement to preserve harmonious relationships, or rely heavily on instructors rather than initiating autonomous peer-led problem-solving. These culturally embedded communication patterns suggest that existing Western teamwork frameworks may not fully explain the development of collaborative competence among Chinese university students and therefore require contextual examination.

This study seeks to address the practical, theoretical, and cultural gaps identified above by proposing a context-sensitive, multi-variable conceptual model that explains the development of team collaboration competence through university soccer participation within the Chinese higher education context. Drawing upon established theories of social learning, self-efficacy, and positive youth development, the study examines the social-psychological mechanisms through which participation in soccer may contribute to teamwork competence, while considering the influence of culturally embedded interpersonal norms and educational practices (Bandura, 1997; Holt et al., 2017; Benson et al., 2016). Using a rigorous mixed-methods research design, this study aims not only to determine whether participation in university soccer is associated with enhanced teamwork competence but also to explore how these competencies are developed, the psychological processes through which they emerge, the cultural factors that may facilitate or constrain their development, and the extent to which they are transferable to academic, professional, and other non-sport settings. In doing so, the study contributes to a more contextually grounded understanding of teamwork development within East Asian higher education and extends the predominantly Western literature on sport-based psychosocial development by providing empirical evidence from Chinese universities (Bandura, 1997; Bronfenbrenner, 1979; Holt et al., 2017).

2. Literature Review and Theoretical Framework

2.1 Soccer Participation as a Socialization Micro-System

Rather than conceptualizing sport participation as a simple input–output activity, this study views soccer as a dynamic, rule-governed micro-social system in which social, cognitive, and behavioural competencies are continuously developed through interpersonal interaction. This perspective is consistent with ecological and social learning approaches, which propose that learning occurs through reciprocal interactions between individuals and their social environments (Bandura, 1986; Bronfenbrenner, 1979). Unlike individual sports, soccer is characterised by high levels of task interdependence, requiring players to coordinate movement, communicate effectively, make rapid collective decisions, and adapt continuously to changing game situations (Carron & Eys, 2012).

Within this environment, successful performance depends not only on individual technical ability but also on the quality of interpersonal relationships, shared understanding, and collective decision-making. Team members must continuously negotiate roles, interpret teammates' intentions, regulate their own emotions, and coordinate actions under conditions of uncertainty and time pressure (Eccles & Tenenbaum, 2004; Salas et al., 2015). Consequently, the soccer field provides an authentic social learning environment in which teamwork, communication, leadership, cooperation, and conflict management are repeatedly practised through meaningful interaction (Benson et al., 2016; Eys & Martin, 2020).

From a developmental perspective, sustained participation in soccer provides repeated opportunities for experiential learning and socialisation. Through ongoing interaction with coaches and teammates, students receive immediate feedback regarding their behaviour, learn socially acceptable group norms, and gradually internalise collaborative values such as collective responsibility, mutual trust, accountability, and shared goal commitment (Bandura, 1986; Holt et al., 2017). Therefore, soccer may be understood as an educational context in which social competence develops through continuous participation in collaborative activities rather than through technical instruction alone.

2.2 The Multidimensional Nature of Team Collaboration Competence

Team collaboration competence is increasingly recognised as a multidimensional construct rather than a single interpersonal skill. Contemporary research in organisational psychology conceptualises effective teamwork as the integration of cognitive, affective, and behavioural processes that enable individuals to coordinate effectively in pursuit of shared goals (Salas et al., 2015; Kozlowski & Ilgen, 2006).

The cognitive dimension refers to team members' ability to develop shared mental models, maintain collective situational awareness, interpret task requirements consistently, and coordinate decision-making under changing circumstances (Cannon-Bowers et al., 1993; Mohammed et al., 2010). The emotional dimension encompasses interpersonal trust, empathy, psychological safety, emotional regulation, and the ability to maintain constructive interpersonal relationships despite performance pressure or disagreement (Edmondson, 1999; Salas et al., 2015). The behavioural dimension is reflected through observable collaborative behaviours, including effective communication, role fulfilment, mutual performance monitoring, coordination, backup behaviour, and constructive conflict management (Salas et al., 2005; Marks et al., 2001).

Furthermore, teamwork competence is dynamic rather than static. According to Marks, Mathieu, and Zaccaro's (2001) Team Process Framework, effective collaboration evolves across transition processes (planning and goal setting), action processes (coordination and monitoring), and interpersonal processes (motivation, trust, and conflict management). Accordingly, collaboration competence should be understood as a developmental capability that emerges through repeated interaction rather than as a fixed individual characteristic.

However, the expression of teamwork behaviours is also shaped by cultural context. Much of the existing teamwork literature has been developed within Western societies characterised by relatively egalitarian communication patterns and direct approaches to disagreement (Tuckman, 1965; Hofstede, 2001). In contrast, interpersonal interaction in Chinese society is strongly influenced by Confucian values emphasising harmony, respect for hierarchy, and the preservation of *mianzi* (face), which may influence how students communicate, negotiate disagreement, and participate in collaborative decision-making (Hwang, 1987; Bond, 1991). Consequently, the development and expression of teamwork competence should be examined within its cultural context rather than assuming universal applicability of Western teamwork models.

2.3 Integrated Theoretical Foundations: Self-Determination Theory and Social Cognitive Theory

This study adopts an integrated theoretical framework as seen in Figure 1. combining Self-Determination Theory (SDT) (Deci & Ryan, 2000) and Social Cognitive Theory (SCT) (Bandura, 1986, 1997) to explain how participation in university soccer contributes to the development of team collaboration competence. SDT proposes that optimal psychological functioning and sustained behavioural engagement occur when three basic psychological needs i.e. autonomy, competence, and relatedness are satisfied (Deci & Ryan, 2000). Within university soccer, students experience autonomy through tactical decision-making, competence through skill mastery and successful team performance, and relatedness through meaningful relationships with teammates and coaches. Satisfaction of these needs enhances intrinsic motivation, persistence, emotional well-being, and cooperative behaviour, all of which contribute to effective teamwork.

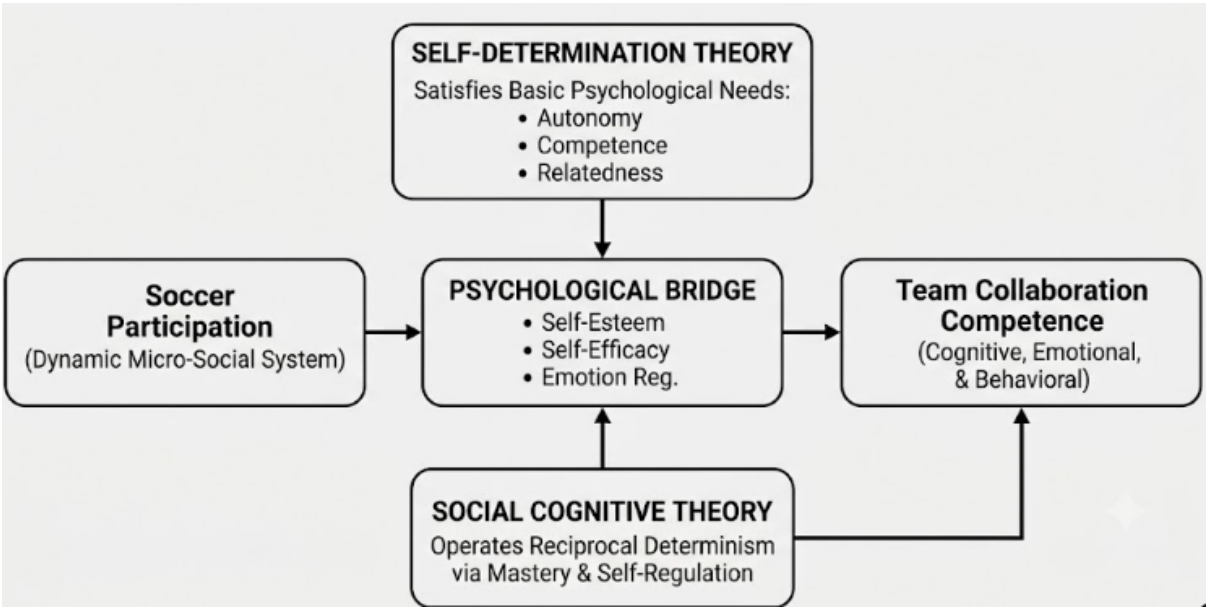

Figure 1. Integrated Theoretical Foundations: SDT and SCT

Complementing SDT, SCT explains how individuals acquire new behaviours through observational learning, social interaction, feedback, and the development of self-efficacy beliefs (Bandura, 1986, 1997). Soccer provides repeated opportunities for students to observe competent teammates, practise collaborative behaviours, receive immediate reinforcement, and gradually develop confidence in their ability to communicate, coordinate, and contribute effectively within a team. Integrating SDT and SCT provides a comprehensive explanation of both the motivational and behavioural mechanisms underlying teamwork development. Whereas SDT explains why students become motivated to engage in collaborative behaviour through psychological need satisfaction, SCT explains how those collaborative behaviours are learned, reinforced, and translated into enduring teamwork competence. This integrated framework therefore provides the theoretical foundation for examining the pathways through which soccer participation contributes to team collaboration competence within the sociocultural context of Chinese higher education.

2.3.1 Self-Determination Theory (SDT)

Self-Determination Theory (SDT), developed by Deci and Ryan (1985, 2000), provides one of the most influential frameworks for explaining human motivation, psychological well-being, and behavioural persistence. SDT proposes that optimal functioning and sustained psychosocial development occur when three universal psychological needs are satisfied: autonomy, referring to the experience of volition and self-direction; competence, referring to the perception of effectiveness in interacting with one's environment; and relatedness, referring to the experience of meaningful interpersonal connection and belonging (Deci & Ryan, 2000; Ryan & Deci, 2020). The satisfaction of these needs promotes intrinsic motivation, psychological well-being, resilience, and adaptive social functioning across educational, organisational, and sporting contexts (Ryan & Deci, 2017; Vansteenkiste et al., 2020).

The structural characteristics of soccer provide an educational environment in which these three psychological needs can be simultaneously satisfied. Although players operate within tactical and regulatory constraints, they continuously exercise autonomy by making independent decisions regarding positioning, passing, movement, and tactical adaptation during play (Deci & Ryan, 2000). Feelings of competence develop through repeated mastery experiences, successful skill execution, and constructive performance feedback received from coaches and teammates, all of which strengthen individuals' perceptions of effectiveness (Bandura, 1997; Ryan & Deci, 2017). Equally important, the highly interdependent nature of soccer fosters relatedness by requiring players to communicate, cooperate, trust one another, and pursue shared team objectives, thereby cultivating a strong sense of belonging and collective identity (Carron & Eys, 2012; Eys & Martin, 2020).

Research in sport psychology consistently demonstrates that when athletes perceive their sporting environment as autonomy-supportive and experience satisfaction of these three basic psychological needs, they report higher levels of intrinsic motivation, psychological well-being, persistence, and prosocial behaviour (Ntoumanis, 2001; Ryan & Deci, 2017; Teixeira et al., 2020). Within the context of university soccer, satisfaction of autonomy, competence, and relatedness is therefore expected to facilitate the development of interpersonal confidence, cooperative behaviour, and sustained engagement in collaborative activities. These motivational processes provide an important theoretical explanation for how participation in soccer may contribute to the development of team collaboration competence among university students.

2.3.2 Social Cognitive Theory (SCT)

Social Cognitive Theory (SCT), developed by Bandura (1986, 1997), complements Self-Determination Theory by explaining the cognitive and behavioural processes through which

individuals acquire, develop, and sustain new behaviours. Central to SCT is the principle of reciprocal determinism, which proposes that human functioning results from the continuous interaction among personal factors (e.g., cognitive beliefs and emotions), behavioural patterns, and environmental influences (Bandura, 1986). Rather than viewing learning as a passive process, SCT conceptualises individuals as active agents who continuously interpret, regulate, and modify their behaviour in response to social experiences.

Within the context of university soccer, the playing environment functions as an authentic social learning setting in which teamwork behaviours are acquired through observational learning**,** mastery experiences**,** social persuasion**,** and self-regulation (Bandura, 1986, 1997). Students develop collaborative competencies not through theoretical instruction alone but by observing teammates' communication patterns, leadership behaviours, conflict-management strategies, and cooperative interactions during training and competitive matches. Through repeated observation and behavioural modelling, players gradually internalise effective interpersonal behaviours and apply them during subsequent team interactions (Bandura, 1986; Schunk & DiBenedetto, 2020).

A central construct within SCT is self-efficacy**,** defined as an individual's belief in their capability to organise and execute the actions required to achieve desired outcomes (Bandura, 1997). According to Bandura (1997), mastery experiences represent the most influential source of self-efficacy because repeated success strengthens individuals' confidence in their abilities to perform challenging tasks. Within university soccer, successful execution of tactical decisions, effective communication, coordinated teamwork, and positive performance feedback from coaches and teammates reinforce students' perceptions of competence and increase their confidence in managing collaborative situations. Growing evidence from sport psychology indicates that participation in organised team sports enhances self-efficacy, communication confidence, leadership behaviours, and cooperative engagement, with these psychological resources extending beyond sport into academic and professional settings (Feltz et al., 2008; Holt et al., 2017).

In addition to observational learning and mastery experiences, SCT emphasises the importance of self-regulation**,** whereby individuals actively monitor, evaluate, and modify their thoughts, emotions, and behaviours to achieve desired goals (Bandura, 1986). Soccer provides a particularly demanding environment for the development of self-regulatory skills because players must continually manage emotional responses to competitive pressure, tactical uncertainty, mistakes, and interpersonal interactions while maintaining effective team performance. Through repeated participation, students learn to regulate frustration, control impulsive reactions, adapt their behaviour to changing game situations, and maintain constructive communication despite setbacks. These self-regulatory capacities contribute not only to improved athletic performance but also to more effective teamwork, conflict management, and collaborative decision-making in educational and organisational contexts (Zimmerman, 2000; Toering et al., 2009).

Within the present study, Social Cognitive Theory provides the behavioural mechanism explaining how participation in university soccer facilitates the development of team collaboration competence. While Self-Determination Theory explains why students become intrinsically motivated to engage in collaborative activities through the satisfaction of autonomy, competence, and relatedness, SCT explains how repeated social interaction, observational learning, mastery experiences, and self-regulation contribute to the development of key psychological resources, particularly self-efficacy**,** self-esteem**, and** emotion regulation**,** which subsequently enhance students' capacity to communicate, cooperate, and perform effectively within teams.

2.2 Deconstructing the Mediating Mechanisms: The Tripartite Psychological Bridge

The structural model depicted in Figure 1 positions a tripartite psychological bridge as the parallel mediating framework converting soccer participation into team collaboration competence. These three distinct internal resources capture the affective, cognitive, and behavioural-control pathways of internalization:

2.2.1 Self-Esteem

Serving as the foundational affective mediator, self-esteem captures an individual's overall subjective evaluation of self-worth. Grounded in Rosenberg's conceptualisation of global self-esteem, it reflects a stable sense of personal value and social adequacy (Rosenberg, 1965). In team soccer, experiencing collective acceptance and developing group-level belonging directly fortifies a student's feelings of self-respect and social validity. This psychological safety net provides the necessary emotional resilience to enter collaborative group spaces without a paralyzing fear of personal failure or immediate social rejection, thereby facilitating proactive communication.

2.2.2 Self-Efficacy:

Operating as the primary cognitive mediator, self-efficacy reflects context-specific confidence in one's capacity to execute required actions and achieve desired outcomes (Bandura, 1977, 1986). Amassing successful mastery experiences on the soccer pitch strengthens efficacy beliefs through performance accomplishments and vicarious learning. This self-efficacy transfers outward, enhancing the student's belief in their ability to resolve complex problems, navigate role ambiguity, and persist through setbacks within academic and organizational settings.

2.2.3 Emotion Regulation:

Functioning as the vital behavioural-control mediator, emotion regulation refers to the processes through which individuals influence which emotions they have, when they have them, and how they are experienced and expressed (Gross, 1998). Soccer matches expose students to immediate, high-stress triggers (e.g., unfair refereeing decisions, teammate errors, or imminent defeat), requiring the deployment of adaptive regulatory strategies such as cognitive reappraisal and response modulation. Internalizing these strategies enables students to modulate anger, anxiety, and frustration, thereby preventing team friction from escalating into destructive interpersonal conflict.

2.3 Contextual and Cultural Boundaries: Mianzi and Authority Dependence

The conversion of internal psychological assets into active, task-effective team collaboration does not occur in a cultural vacuum. In contemporary Chinese higher education, Western organizational paradigms frequently fail because they overlook deeply embedded Confucian relational logics. To address this gap, this framework integrates Face-Negotiation Theory (FNT) and the Power Distance construct as critical sociolinguistic and structural moderators intersecting behavioural pathways as seen in Figure 2.

2.3.1 Face Culture (Mianzi)

Grounded in Ting-Toomey's Face-Negotiation Theory, *mianzi* reflects a culturally embedded ocial concern for maintaining a favourable public image, claiming social worth, and avoiding interpersonal embarrassment or loss of dignity (Ting-Toomey, 1988; Ting-Toomey & Kurogi, 1998). Within collectivist contexts, social interaction is strongly governed by mutual face-saving

and "other-face" protection. On the soccer pitch, this orientation introduces a powerful behavioural boundary: communication avoidance.

To preserve relational harmony and protect peer dignity, a student may engage in tactical silence such as withholding corrective feedback, failing to alert a teammate to an error, or avoiding constructive disagreement. While this avoidance successfully minimises short-term relational discomfort, it may inhibit critical feedback cycles necessary for team learning and adaptation, thereby limiting progression through the "storming" phase of group development as described in Tuckman's model of group formation (Tuckman, 1965). Consequently, collaboration may remain socially harmonious yet cognitively underdeveloped.

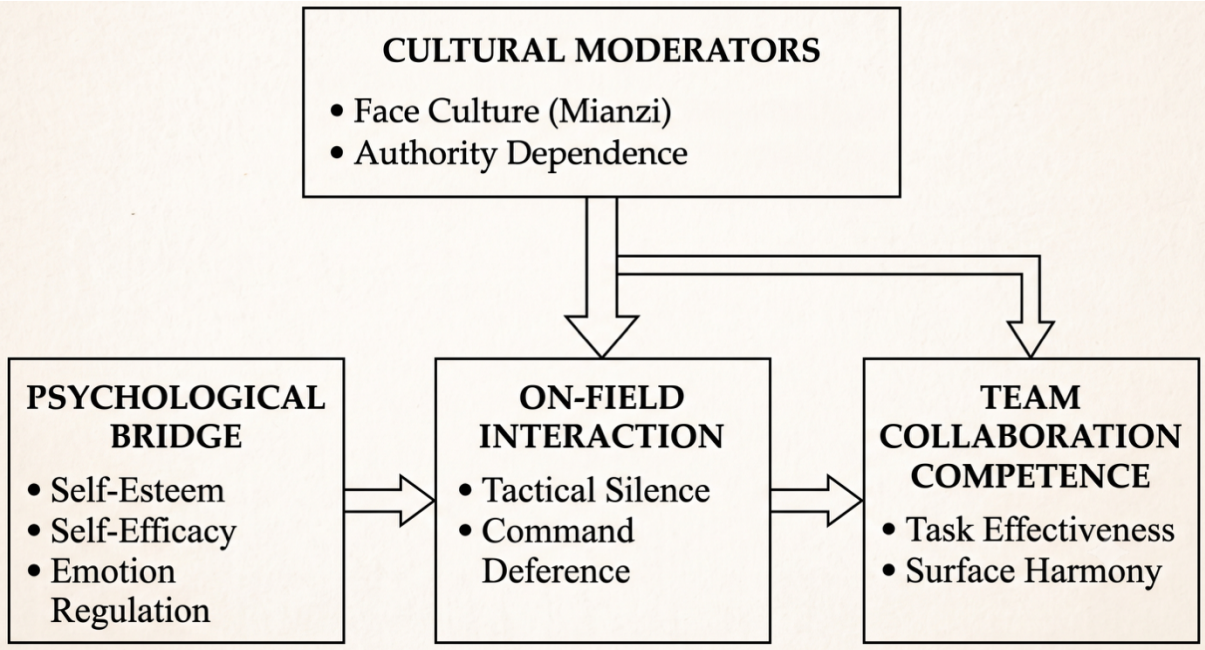

Figure 2. The Moderating Mechanism of Sociolinguistic (*Mianzi*) and Structural (Authority Dependence) Constraints on Behavioural Collaboration Pathways.

2.3.2 Authority Dependence:
Rooted in high power-distance educational heritages, Chinese university students demonstrate a deeply socialized behavioural inclination to accept and defer to asymmetric, hierarchical distributions of power. This aligns with Hofstede's cultural dimensions theory, which characterises high power-distance societies as those where inequality in authority is widely accepted and rarely questioned (Hofstede, 2001). In such contexts, hierarchical control is normalised within institutional learning environments, reinforcing obedience-oriented interaction patterns.

On the soccer field or in classroom projects, this cultural orientation manifests as an over-reliance on explicit instructions from authority figures (e.g., teachers, coaches, or senior team captains). Rather than engaging in autonomous decision-making or peer-led problem-solving, individuals may defer responsibility upward, consistent with findings that power distance can suppress participative leadership and reduce collaborative agency in group tasks (House et al., 2004; Kirkman et al., 2009). Instead of engaging in adaptive peer negotiation and distributed leadership,

students often wait for directional commands, particularly in ambiguous or high-pressure situations where authority cues become psychologically salient.

Consequently, authority dependence functions as a structural boundary condition that alters the realization of collaboration competence. It may anchor teams to passive compliance rather than active, shared leadership execution, thereby limiting emergent teamwork behaviours such as initiative-taking, peer feedback exchange, and collective strategic adjustment on and off the field. Rooted in high power-distance educational heritages, Chinese university students demonstrate a deeply socialized behavioural inclination to accept and defer to asymmetric, hierarchical distributions of power. On the soccer field or in classroom projects, this manifests as an over-reliance on explicit instructions from authority figures (e.g., teachers, coaches, or senior team captains). Instead of engaging in autonomous, adaptive peer problem-solving, students often wait for directional commands.

3. PROPOSED RESEARCH METHODOLOGY

3.1 Research Design Rationale

This study adopts a sequential explanatory mixed-methods design to examine the relationship between soccer participation and team collaboration competence among Chinese university students. The design integrates a quantitative phase using Structural Equation Modelling (SEM) followed by a qualitative phase to explain and contextualise statistical findings (Creswell & Plano Clark, 2018). This approach enables both hypothesis testing and in-depth exploration of culturally embedded mechanisms underlying collaborative behaviour.

3.2 Quantitative Phase

3.2.1 Sample and Sampling Strategy

The quantitative phase targets Chinese university students, selected due to their relevance to emerging adulthood and social skill development (Arnett, 2004). A stratified purposive sampling strategy will be applied across Zhejiang University, Hangzhou Normal University, and Wenzhou University. A total sample of 300–400 respondents is targeted to ensure adequacy for SEM analysis. This meets recommended thresholds for multivariate modelling (Kline, 2015; Hair et al., 2019). Stratification ensures variation in gender, socioeconomic background, academic level, and soccer experience, supporting moderation analysis.

3.2.2 Instrumentation

Data will be collected using a structured questionnaire comprising socio-demographic information, a soccer participation scale, a team collaboration competence scale, and measures of key psychological mediators and cultural moderators. The psychological mediators include self-esteem, operationalised using Rosenberg's (1965) global self-esteem scale, self-efficacy based on Bandura's (1977, 1986) conceptualisation of perceived behavioural capability, and emotion regulation derived from Gross's (1998) process model of emotion regulation. In addition, cultural moderators are assessed through constructs of Face Culture (*Mianzi*) and authority dependence, with the latter measured using a self-developed scale tailored to the Chinese higher education context. Where possible, established validated instruments are employed, while culturally specific constructs are measured using adapted or newly developed items to ensure contextual relevance and conceptual alignment.

3.2.3 Data Analysis

Quantitative data will be analysed using SPSS and AMOS. The analytical procedures include descriptive statistics and reliability analysis, with Cronbach's alpha set at a minimum threshold of 0.70 to ensure internal consistency, followed by Confirmatory Factor Analysis (CFA) to assess construct validity. Structural Equation Modelling (SEM) will then be employed to test the hypothesised relationships among variables. Mediation effects will be examined using bootstrapping with 5,000 resamples, with statistical significance determined by 95% bias-corrected confidence intervals (Preacher & Hayes, 2008; Hayes, 2022). Moderation effects will be tested through multi-group SEM for categorical variables and interaction modelling for continuous variables, with simple slope analysis applied to interpret significant interactions (Aiken & West, 1991).

3.3 Quantitative Phase

3.3.1 Instrumentation

The qualitative phase adopts a purposive sampling strategy, selecting 10–15 participants from Phase 1 based on theoretical sampling principles that prioritise cases reflecting key statistical patterns or anomalies. This sample size is considered sufficient to achieve data saturation in relatively homogeneous populations (Guest et al., 2006; Saunders et al., 2018).

3.3.2 Data Collection

Data will be collected through semi-structured interviews lasting 45–60 minutes, which will be audio-recorded and transcribed verbatim with participant consent. The interview protocol focuses on communication behaviour and Face Culture (*Mianzi*), authority dependence in decision-making, emotional regulation under competitive pressure, and the transfer of teamwork skills between sport and academic contexts.

3.3.3 Data Analysis

Interview data will be analysed using Thematic Analysis, with a focus on identifying recurring patterns that explain and contextualise quantitative findings, particularly those related to cultural and psychological mechanisms influencing collaboration competence.

3.4 Validity, Reliability, and Ethics

Instrument reliability will be assessed using Cronbach's alpha, while construct validity will be established through Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). Content validity will be ensured through expert review involving seven scholars, complemented by a pilot study with 30 participants to refine item clarity and cultural appropriateness. Ethical approval will be obtained prior to data collection, and all procedures will adhere to strict ethical standards, including voluntary participation, informed consent, anonymity, and full confidentiality of data.

4. DISCUSSION

This study advances the understanding of sport-based socialisation by conceptualising soccer participation not as a direct or automatic driver of teamwork skills, but as a psychologically mediated and culturally conditioned developmental process. By integrating Self-Determination Theory (Deci & Ryan, 2000) and Social Cognitive Theory (Bandura, 1986), the model specifies a structured pathway through which task interdependence in soccer supports the development of self-esteem, self-efficacy, and emotion regulation, which in turn translate into enhanced collaboration competence. This contribution refines existing sport psychology assumptions by articulating the internal psychological mechanisms that link physical participation to socio-cognitive outcomes.

A key theoretical extension lies in the incorporation of culturally embedded moderating mechanisms Face Culture (Mianzi) and Authority Dependence which reposition culture from a background condition to an active explanatory force. This responds to the dominance of Western-centric models in sport and organisational psychology by offering a context-sensitive framework grounded in East Asian educational realities. In doing so, the study highlights how relational norms and hierarchical orientations can shape, constrain, or redirect the expression of psychological capabilities within team-based environments.

Practically, the model reframes soccer within university settings as an intentional psychosocial learning platform rather than a purely physical training activity. It provides educators with a conceptual basis for designing sport experiences that explicitly cultivate communication, shared leadership, emotional control, and peer negotiation. At the policy level, the framework supports national educational objectives focused on holistic student development by linking sport participation to measurable socio-emotional and collaborative outcomes.

5. CONCLUSION

This conceptual paper proposes an integrative framework explaining how soccer participation contributes to team collaboration competence among Chinese university students through a dual mechanism of psychological mediation and cultural moderation. The model demonstrates that collaboration outcomes are not directly produced by sport engagement, but are instead shaped through the internalisation of affective, cognitive, and regulatory capacities, which are further conditioned by culturally embedded relational structures. By synthesising motivational and social cognitive theories with culturally specific constructs such as *Mianzi* and authority dependence, the study offers a more nuanced and contextually grounded explanation of teamwork development in East Asian higher education settings. This contributes to both theory expansion and contextual diversification in sport psychology and educational research. Future research should empirically validate the proposed model across different cultural contexts and sport types, and examine whether alternative cultural configurations produce similar or divergent psychological pathways. Such work would further strengthen the generalisability and boundary conditions of the proposed framework.

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