

Talent Development and Participation in Female Football in Rwanda: Influencing Factors and Challenges

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Abstract

This study aims to assess the factors determining talent development and participation in football in Rwanda. A mixed methods approach was used to gather quantitative and qualitative data from participants (n = 200), who were football players, administrators and coaches from school teams and local clubs drawn from different leagues in Rwanda. Purposive sampling strategy was used to obtain the sample. Data collection instruments were developed around five indicators, namely, competition, psychological, enjoyment, physical appearance, and mastery factors, as determinants of talent development among female football players. The raw data were processed and analyzed statistically with the help of IBM SPSS V.26. One-way ANOVA was deemed crucial for analyzing quantitative data, whereas thematic analysis was used to analyze qualitative data. Competition, psychological, and enjoyment factors exhibited statistically significant positive correlations, ranging from strong, moderate, and weak, with sociodemographic factors. Moreover, physical appearance and mastery factors demonstrated significant moderate negative correlations and statistically significant positive weak correlations. The findings indicate that identified factors play a significant role in determining talent development and participation in football among female players in Rwanda. The findings of the current study contribute to the existing body of knowledge by providing insights on female football in Rwanda, especially focusing on factors influencing talent development among females and associated challenges. Future studies should include comprehensive methodologies to enhance validity and reliability; they should also explore psychological aspects more deeply and develop targeted interventions that investigate how financial constraints prevent full female participation in Rwandan football.

Keywords: Talent Development, Football, Female Athletes, Sports Participation, Rwanda.

Introduction

For decades, talent development within the sports sector has been fundamental to identifying football players worldwide. With rapid development around football, a talent development environment that mimics the needs of players has been instrumental in building strong and competitive teams. As cited by Sweeney *et al.* (2022), TDE embodies four linked features, including long-term aims and methods, wide-ranging coherent support and messages, emphasis on appropriate development rather than early selection, and individualized and ongoing development. Football has also been highlighted as a global

game; it surpasses nationalistic and cultural boundaries, attracting societies all over the world because of its competitiveness and friendship (Kennedy & Kennedy, 2012; Vaughan *et al.*, 2022). In this context, sports talent development is seen as an essential issue of concern geared toward building players who can excel globally (Ronkainen *et al.*, 2023).

While various theories exist in relation to talent development and identification (Kaliannan *et al.*, 2023; Kuknor & Kumar, 2024; Walker *et al.*, 2010), scientific investigations regarding exceptional talent have been in place since the mid-1800s, with the work of Francis Galton, as cited by Cerezo (1991). The notion of talent increased considerably with this initial exploration and reflected on the ability of individuals to excel in the field of sport. Nevertheless, the scientific community has been informed about indicators of exceptional achievement in line with strong global interest in sport as a source of revenue (Girginov, 2023; Taylor & O'Sullivan, 2009). Since then, people have started their voluntary involvement in sport activities, as both leisure and source income impact their lives and the wellbeing of the community. According to Varmus *et al.* (2021), the notion of talent is central to many models and policies related to athlete development, as reflected in the practice of identifying and selecting talented athletes at early ages for them to develop in the most beneficial environments. Therefore, this practice is an innate feature and can be considered real and identifiable; in essence, it can help predict development, success and expertise.

Previous studies have indicated that talent development in football relies on a combination of innate abilities and developed skills that are enhanced through rigorous training and exposure to competition (Cunningham *et al.*, 2022; Mujika *et al.*, 2018). However, in the literature, factors that hinder the development of talent in the field have been detrimental to this progress; thus, becoming elite in the field requires more than just being selected; rather, a complex interaction of psychological, social, and environmental factors plays an integral part (Kelly *et al.*, 2024). The implication in this case is that the birth dates of players within such programs determine their age; thus, younger players face fewer opportunities than older players do (Bozděch *et al.*, 2023). In addition, the stress on the long-term development of football players despite the constraints associated with early success highlights the importance of devising training strategies that incorporate age-related progression and skill acquisition (Ford *et al.*, 2011).

There are two main variables that determine the extent to which an athlete develops his or her talent: his or her psychological profile and social setting. Self-determination theory explains how the satisfaction of basic psychological needs such as autonomy, competence, and relatedness affects the motivation, well-being and performance of athletes (Gano-Overway & Harrison, 2024). Additionally, coaches, parents, peers and cultural norms form the social environment, which largely determines the values, beliefs and engagement of athletes in the sport (Coutinho *et al.*, 2021). Thus, comprehending these intrinsic motivators alongside external influences becomes obligatory for establishing a supportive talent development ecosystem (Jiang *et al.*, 2024). Football is one of the most popular games worldwide; however, women's participation in it is disproportionately lower than men's due

to societal disparities and systemic barriers (Devine, 2018). This background therefore necessitates holistic inquiry into the factors that inhibit the progress of women's football in Rwanda. Despite tremendous effort to promote female participation in Rwandan football and gender promotion. Efforts to foster gender equality in sports in Rwanda have fallen short, as female soccer players face a range of challenges, including cultural stereotypes and insufficient infrastructure and resources (Ministry of Sports and Culture, 2012). These are seen through limited access to training grounds, financial constraints, and social norms that prioritize male over female participation (USAID, 2017).

Problem Statement

Worldwide perspectives indicate that football has been a leading game in the field of sports and entertainment (Tettamanzi *et al.*, 2024). Male football players have been for long favored for years in terms of participation compared to their female counterparts (Downward & Wicker, 2025). Currently, the African football is dominated by male football teams and male football players present a large proportion while female players are still a small number (Ogwezzy *et al.*, 2025). Gender disparities in participation continuously hinders female representation in football worldwide including Rwanda (Agbakoba-Onyejiana, 2024). In Rwanda, while the national men's football league has been active since 1975, the first Rwandan women's league was established much later in 2000. Despite this, the women's league remains sporadic and, in some regions, non-existent. Specifically, talent development among female football has been critical toward female participation (Mitchell *et al.*, 2021). Understanding factors determining talent development among females in Rwandan football and challenges that could be encountered during the implementation of various initiatives existing in Rwanda to development female football deems crucial and central to this study. By understanding the factors that affect female participation in football, it becomes possible to increase women's participation and provide opportunities for them to showcase their talent. This could ultimately help to establish a more inclusive and diverse football community in Rwanda.

The broad aim of this research is to investigate how sociodemographic and psychological factors influence the development of talent among female football players in Rwanda. This study was guided by two specific objectives:

1. To identify factors determining talent development and participation in football among female players in Rwanda
2. To ascertain the level of significance of factors determining talent development and participation in football among female players in Rwanda

Methods

Research design

A mixed method approach was employed following its robustness in providing balanced insights with both quantitative and qualitative data. This research design allows investigators to assess the factors determining talent development and participation in football, with a focus on the outlook of female football players in Rwanda.

Quantitative data collection and analysis

To collect quantitative data, a systematic procedure for data collection was as follows: First, a sociodemographic information questionnaire was designed to include information related to the age range, gender, marital status, playing experience, religion, living status, employment status, annual household income, and educational status of the participants. Second, a questionnaire was developed to encompass factors hypothesized to be determinants of talent development among female football players in Rwanda. The constructions of the questionnaire focused on (i) the perception of the competition factor as a determinant of talent development among female football players; (ii) the perception of the psychological factor as a determinant of talent development among female football players; (iii) the perception of the enjoyment factor as a determinant of talent development among female football players; (iv) the perception of physical appearance as a determinant of talent development among female football players; and (v) the perception of the mastery factor as a determinant of talent development among female football players. A five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree was used by participants to indicate their levels of understanding and experience of determinants of TD among female football players in Rwanda.

Qualitative data collection and analysis

Qualitative data were collected to gain insight into the dynamics of a female football talent development program. We took advantage of qualitative data to integrate detailed experiences of female football players enrolled in the program from different teams across Rwanda; therefore, we analyzed participants' feelings and experiences from different perspectives through in-depth interviews and thematic analysis, allowing an enhanced understanding of gender dynamics.

Study participants

Participants for the study were drawn from 12 female football teams in the second division of the national league and 10 female football teams in the first division of the national league; the teams were distributed in all four provinces of the country and the city of Kigali in Rwanda. The study considered female footballers who play for senior elite teams and groups engaged in football development, management, and coaches in Rwanda. The age target group was female footballers and team administrators under 15 and above 45 years of age. The target study population was 200 people across all Rwandan football players.

Statistical analysis

During this study, the random sampling technique was used to select 200 targeted populations, including female football players, team administrators and coaches. The focus was on school female football teams and local female clubs in their different league divisions in Rwanda. In each stratum, simple random sampling was a critical tool for selecting the respondents for this study.

Data collection procedures

The procedure involved presenting an introduction letter through an email to the team managers so that the Researcher could get the go ahead for their participation in the study. Confirmation led to the selection of participants from the available individual samples. After selecting the sample individuals, the target group received the study information to gain preliminary acceptance (Martínez-Mesa *et al.*, 2016). The study then offered an information letter, which contained the study information, to the participants.

The analyst collected a letter of presentation from the Chief of the Founders as well as the Head of the Division of Sports Administration and Arrangement Improvement. Sometime recently progressing to the field, the analyst received consent from the "Federation Rwandese De Football Association" as the body in which they consider it to be conducted. This consent was connected to other required archives to look for inquire about authorization from the Rwanda Service of Instruction, the body in charge of inquiring about grants. Once authorization was allowed, the analyst reached all group presidents for information collection planning. The researcher then went by all the groups after the set plan to manage the survey. The analyst over and over went to Rwanda Football Alliance matches and prepared sessions for perception and conceivable interviews with coaches. The analyst collected group execution information from group records after authorization from individual group presidents was obtained. Assent has been continuously marked in recent years as a step forward in information collection. To guarantee great and quick preparation of information collection and add up to respondent understanding, the analyst utilized competent personnel to decipher information collection instruments into Kinyarwanda to encourage a few players, who can be burdened with English articulations.

Data analysis

The qualitative data collected in this study underwent a meticulous process of organization, categorization, and cleansing. Multiple responses were consolidated and refined to ensure a coherent dataset for analysis. For quantitative analysis, the Statistical Package for Social Sciences (SPSS) version 26 was used. This tool facilitated the generation of frequencies, providing an overview of the distribution of responses. Additionally, correlation bivariate analysis was conducted to explore the relationships between social demographics and basic psychological needs concerning talent development among female football players in Rwanda. To achieve specific objectives of this study, decision rules and a predetermined significance level were employed. The significance level, commonly denoted as alpha (α), was set at a conventional threshold of 0.05. This predetermined alpha level served as the criterion to determine the statistical significance of the findings.

Reliability and validity

The validation process focused on both face validity and content validity. Face validity ensured that the questionnaire appeared to measure what it intended to measure, assessing its clarity and appropriateness. Content validity, on the other hand, ensured that the questionnaire comprehensively covered the relevant aspects of the study, aligning with

its objectives. The five experts provided valuable feedback, offering insights into the clarity, relevance, and completeness of the questionnaire. This iterative process allowed for refinement, ensuring that the final instrument was not only well-crafted but also a robust measure of the intended constructs. To increase the reliability and credibility of the research instrument, a test–retest method was adopted with 20 female athletes in the Rwandan Sports Commission. The data were subjected to Cronbach’s alpha statistics to test internal consistency. A reliability coefficient of .68 was obtained, which is considered high enough.

Results

Demographic information

Participants of this study were female football players in Rwanda. As indicated in Table 1, of the 200 participants, the largest proportion completed corresponding to 66 % (n = 132) completed high school while 21 % (n = 42) completed primary education, 12.5 % (n=25) hold a bachelor’s degree with only one participant, 0.5 % (n =1) with a master’s degree. Majority of participants belonged to Catholicism representing 52.5 % (n = 105), Protestants constituted 32.5 % (n =65),while Islam 5 % (n = 10), and Others without known beliefs constituted 10 % (n = 20). 15.5 % (n = 31) were married while 84.5 % (n = 169) were single. 26.5% (n = 53) were employed full time, 27.5 (n = 55) had part-time employment, 45.5 (n = 91) were seeking opportunities while 0.5 % (n = 1) were retired. These demographic characteristics were explored to enhance reliability of the findings due to the incorporation of perspectives from participants with diverse backgrounds.

Table 1.1: Demographic characteristics of study participants

Category	Frequency	Per cent	Valid Percent	Cumulative Percent
Education				
Primary	42	21	21	21
High School Certificate	132	66	66	66
Bachelor's Degree	25	12.5	12.5	12.5
Master's Degree	1	0.5	0.5	0.5
Total	200	100	100	100
Religion				
Catholicism	105	52.5	52.5	52.5
Protestants	65	32.5	32.5	85
Islam	10	5	5	90
Others	20	10	10	100
Total	200	100	100	
Marital status				
Yes	31	15.5	15.5	15.5
No	169	84.5	84.5	100
Total	200	100	100	

Employment status				
Employed-Full-Time	53	26.5	26.5	26.5
Employed-Part-Time	55	27.5	27.5	54
Seeking opportunity	91	45.5	45.5	99.5
Retired	1	0.5	0.5	100
Total	200	100	100	

Primary data (2024)

Quantitative data

The first phase involved collecting quantitative data using a questionnaire. Raw data were processed and analyzed using IBM SPSS 26.0 to generate statistical results from One-Sample *t*-Test.

Table 1: The perception of competition as a determinant of talent development among female football players

One-Sample Test						
Competition factor	Test Value = 3.75					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
S1CF	11.476	199	.000	.75000	.6211	.8789
S2CF	23.723	199	.000	.83000	.7610	.8990
S3CF	3.901	199	.000	.31000	.1533	.4667
S4CF	-6.805	199	.000	-.63000	-.8126	-.4474
S5CF	-10.769	199	.000	-1.24500	-1.4730	-1.0170

Primary data (2024)

CF: Competition factor

A one-sample *t*-test was conducted to determine whether female football players perceive various constructs of the research instrument differently, followed by establishing the degree of significance. According to appendix A, the five constructs regarding the competition factor as a determinant of talent development included those pertaining to competing with others around, being the best in the group, working harder than others, performing better than others, and being fitter than others. Findings were as follows: The mean of 3.75 was considered as the test value for five constructs regarding competition (see Appendix A). The mean served as the test value for the sample, $t(199) = 11.47$, $p = .000$; $t(199) = 23.72$, $p = .000$; $t(199) = 3.90$, $p = .000$; $t(199) = -6.80$, $p = .000$; $t(199) = -10.76$, $p = .000$ at 95% CI. Participants perceived all the constructs as significantly influencing Talent Development (TD) among female football players.

Table 2. Perception of psychological factors as determinants of talent development among female football players

One-Sample Test						
Psychological factor	Test Value = 3.92					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
S1PC	-3.885	199	.000	-.36500	-.5503	-.1797
S2PC	11.406	199	.000	.36500	.3019	.4281
S3PC	-.902	199	.368	-.06500	-.2071	.0771
S4PC	-.426	199	.670	-.03500	-.1969	.1269
S5PC	1.486	199	.139	.12000	-.0393	.2793

Primary data (2024)

PC: Psychological factor

The five constructs regarding psychological factors as determinants of talent development included the following: helping in relaxing, coping with stress, getting away from pressure, acting as a stress release, and taking the mind off other things (see appendix B), findings were as follows: The mean of 3.75 served as the test value for the sample, $t(199) = -3.88$, $p = .001$; $t(199) = 11.40$, $p = .001$; $t(199) = -.90$, $p = .368$; $t(199) = -.426$, $p = .670$; $t(199) = 1.486$, $p = .139$ at 95% C.I. The S3PC, S4PC, and S5PC constructs were not perceived as significantly influencing females to participate in football games, whereas the remaining constructs had a significant influence on TD among female football players.

Table 3. The enjoyment factor as a determinant of talent development among female football players

One-Sample Test						
Enjoyment factor	Test Value = 4.12					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
S1EF	-2.071	199	.040	-.14000	-.2733	-.0067
S2EF	2.042	199	.042	.05500	.0019	.1081
S3EF	-.618	199	.537	-.02500	-.1048	.0548
S4EF	2.042	199	.042	.05500	.0019	.1081
S5EF	2.042	199	.042	.05500	.0019	.1081

Primary data (2024),

EF: enjoyment factor

The five constructs regarding the enjoyment factor as a determinant of talent development included the following: being interesting, being fun, being enjoyable exercises, making me happy, having time (see appendix C) and findings were as follows: The mean of 4.12 served as the test value for the sample, $t(199) = -2.071$, $p = .040$; $t(199) = 2.042$, $p = .042$; $t(199) = -.618$, $p = .537$; $t(199) = 2.042$, $p = .042$; $t(199) = 2.042$, $p = .042$ at 95% C.I. A single construct, S3E, was perceived as not influencing talent development among female football players, whereas others significantly influenced TD among female football players.

Table 4. Perception of physical appearance as a determinant of talent development among female football players

One-Sample Test						
Physical appearance factor	Test Value = 4.37					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
S1PAF	-2.487	199	.014	-.08000	-.1434	-.0166
S2PAF	-2.487	199	.014	-.08000	-.1434	-.0166
S3PAF	-.766	199	.445	-.05000	-.1787	.0787
S4PAF	1.288	199	.199	.04500	-.0239	.1139
S5PAF	4.812	199	.000	.17000	.1003	.2397

Primary data (2024)

PAF: physical appearance factor

The five constructs regarding physical appearance as a determinant of talent development included the following: maintaining a healthy body, being physically fit, maintaining physical healthy, keeping healthy, and improving cardiovascular fitness (see appendix D), and findings were as follows: The mean of 3.75 served as the test value for the sample, $t(199) = -2.487$, $p = .014$; $t(199) = -2.487$, $p = .014$; $t(199) = -.766$, $p = .445$; $t(199) = 1.288$, $p = .199$; $t(199) = 4.812$, $p = .001$ at 95% C.I. The S3PAF and S4PAF constructs were not found to be determinants of talent development among female football players, whereas the rest had significant influence.

Table 5. The perception of mastery factors as determinants of talent development among female football players

One-Sample Test						
Mastery factor	Test Value = 4.127					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
S1MF	-3.501	199	.001	-.31200	-.4878	-.1362
S2MF	4.216	199	.000	.18800	.1001	.2759
S3MF	-.968	199	.334	-.07200	-.2187	.0747
S4MF	-.675	199	.500	-.05200	-.2038	.0998
S5MF	7.226	199	.000	.24800	.1803	.3157

Primary data (2024)

MF: Mastery Factor

The five constructs regarding the mastery factor as a determinant of talent development included the following: getting better at an activity, improving existing skills, doing personal best, obtaining new skills/activity, keeping the current skill level (see Appendix E). Findings were as follows: the mean of 4.127 served as the test value. This mean served as the test value for the sample, $t(199) = -3.501$, $p = .001$; $t(199) = 4.216$, $p = .000$; $t(199) = -.968$, $p = .334$; $t(199) = -.426$, $p = .500$; $t(199) = 7.226$, $p = .000$ at 95% CI. Two constructs, namely, S3MF and S4MF, were not found to be determinants of talent development, whereas others significantly determine talent development among female football players.

Table 6. Relationships between the psychological factors of TD and sociodemographic related to talent development among female football players

Factors of TD and Sociodemographic factors		Level of education	Religious affiliation	Marital status	Employment status
Competition	Pearson Correlation	.784**	.807**	.627**	.936**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	200	200	200	200
Psychological	Pearson Correlation	.725**	.609**	.492**	.676**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	200	200	200	200
Enjoyment	Pearson Correlation	.607**	.804**	.072	.512**
	Sig. (2-tailed)	.000	.000	.309	.000
	N	200	200	200	200
Appearance	Pearson Correlation	.233**	.554**	-.353**	.253**
	Sig. (2-tailed)	.001	.000	.000	.000
	N	200	200	200	200
Mastery	Pearson Correlation	.102	.367**	-.364**	.009
	Sig. (2-tailed)	.152	.000	.000	.901
	N	200	200	200	200

Primary data (2024)

Table 6 shows the relationship between factors determining talent development and explored sociodemographic among female football players. Competition as a factor determining talent development exhibited strong positive correlation in relation to the level of education ($r = .784$, $p = .000$), religious affiliation ($r = .807$, $p = .000$), marital status ($r = .627$, $p = .000$), and employment status ($r = .936$, $p = .000$). For psychological factor with sociodemographic information, significant correlations were found with level of education ($r = .725$, $p = .000$), religious affiliation ($r = .609$, $p = .000$), marital status ($r = .492$, $p = .000$), and employment status ($r = .676$, $p = .000$). Enjoyment factor with respect to demographics explored demonstrated strong correlations with level of education ($r = .607$, $p = .000$), religious affiliation ($r = .804$, $p = .000$), with exception regarding marital status ($r = .072$, $p = .309$), and employment status ($r = .512$, $p = .000$) which exhibited non-significant and moderate correlation respectively. For appearance factor, notable correlations with regard to sociodemographic information included level of education ($r = .233$, $p = .001$), religious affiliation ($r = .553$, $p = .000$), marital status ($r = -.353$, $p = .000$), and employment status ($r = .253$, $p = .000$) while mastery factor demonstrated non-significant correlations with level of education ($r = .102$, $p = .152$), religious affiliation ($r = .367$, $p = .000$), marital status ($r = -.364$, $p = .000$), and employment status ($r = .009$, $p = .901$). These findings indicated that most of

explored factors strongly correlate with sociodemographic situations such as level of education, religious affiliation, marital status, and employment status.

Qualitative data

The second phase involved structured interviews to collect qualitative data accompanying quantitative data obtained in the first phase. A mixed approach presented a robust research methodology. We informed the participants about the purpose of the study and obtained consent from the participants. The interviews took place in a quiet place to avoid distractions. The interviews lasted for 30 minutes.

Interviewer: Can you share a bit about yourself, including your age, education, and football journey?

Participant 1: *I'm 20 years old, currently in university, and I've been playing football since I was 12. I got into it through school tournaments and joined a local club when I was 15.*

Interviewer: What challenges have you faced due to cultural or societal expectations?

Participant 1: *In my community, football is not widely accepted by women. Some people discourage us, saying it's not "feminine," which can be disheartening.*

Interviewer: How does economic status influence opportunities for female football players in your area?

Participant 1: *Economic challenges make it hard to access quality training or equipment. Many girls in my club must juggle work or studies to afford football expenses.*

Interviewer: How does football meet your need for competence (feeling effective and capable)?

Participant 1: *Playing football helps me feel skilled and confident, especially when I see my improvement or gain recognition during tournaments.*

Interviewer: How does football help you feel a sense of relatedness (connection with others)?

Participant 1: *My team feels like a second family. We support each other on and off the pitch that we create.*

Interviewer: Can you share a bit about yourself, including your age, education, and football journey?

Participant 2: *I am 30 years old and have completed my education in high school, where I excelled in my studies and passed my national exams. My football journey began when I took training in academia.*

Interviewer: What challenges have you faced due to cultural or societal expectations?

Participant 2: *Navigating in a football career involves several cultural and societal challenges that impact both personal and professional development, such as gender inequality: Compared with males, women in football often face systematic challenges, including disparities in pay, resources, and media coverage.*

Culture and religious beliefs can also clash with football's inclusive initiative.

Interviewer: How does economic status influence opportunities for female football players in your area?

Participant 2: *Economic status influences opportunities for female players in Rwanda. Limited financial resources can restrict access to essential facilities, equipment, and training programs, thereby hindering skill development and competition.*

Interviewer: How does football meet your need for competence (feeling effective and capable)?

Participant 2: *Football significantly contributes to fulfilling my need for competence by providing continuous opportunities to develop and demonstrate effectiveness and capabilities such as skill development, tactical understanding, achievement and recognition.*

Interviewer: How does football help you feel a sense of relatedness (connection with others)?

Participant 2: *Football helps create a sense of relatedness by fostering teamwork, communication, and shared experiences. When playing, teammates rely on each other to achieve a common goal, building trust and a sense of unity. Sports also bring people from different backgrounds together, allowing them to form friendships and bonds through a shared passion.*

Discussion

The participants of the study disclosed perceptions of preselected factors that hinder talent development among female football players in Rwanda. Five key factors were identified and presented to participant–female football players. These factors were considered potentially to have influenced their career paths and continuous talent development. The factors included were the competition factor, psychological factor, enjoyment factor, physical appearance factor, and mastery factor.

Computed constructs under the competition factor indicated significant mean differences for the first three assertions, whereas the remaining two had significant negative mean differences, as shown in Table 1 and Appendix A. Indicators such as competing with others, the pursuit of being the best in the group of others, hard work, performing better than others, and being fitter than others demonstrated effects on inclusion in female football competitions. Our findings corroborate those of (Porter, 2008), who noted that competition is a main factor for success in any field; conversely, the absence of competition inevitably results in failure.

Regarding the psychological factor (refer to Table 2, Appendix B), positive correlations are observed among factors such as liking people interacting with them, feeling competent, expressing ideas and opinions, considering interacting with people as friends, learning new skills, and having people in life care about them. The interpretation and implications of these findings suggest that education level may influence the perception of pressure, with higher education associated with lower perceived pressure. Previous studies revealed that positive emotions and moods, such as joy and vigor, may contribute to increased self-confidence and sport performance (Gu *et al.*, 2022; Wang *et al.*, 2023). These findings are in line with the present study's findings (see Table 2, appendix B), in which participants emphasized the potential contribution of psychological well-being to participation in sports activities.

The findings in Table 3 show that the enjoyment factor also had a tremendous effect on female football players' participation in Rwanda (see Appendix C). As reported in previous studies, football stimulates enjoyment, which is fundamental to social interaction and harmony (Guo *et al.*, 2024). While the findings are presented in Table 4, Appendix D, the physical appearance factor was another aspect investigated in which physical fitness was considered an important determinant of talent development among female football players. The results concerning how appearance influences rates of female football participation in Rwanda indicate that most of the respondents agree that physical appearance is a motivation to play football. This implies that a large proportion of female football players are motivated by their desire to keep up with their looks or improve on them while engaging in the sport.

Different factors influencing females' participation in football have been identified, indicating various motivations among females who play football. The information available demonstrates that appearance is one such distinguishing aspect of motivation, along with other reasons such as competition, psychological well-being, enjoyment and mastery. These findings are supported in the literature, for example, a study carried out by Kovács and Szakál (2024) emphasizing the rationale of fitness in persistence in football games. We further explored the mastery factor as a pillar for a successful career in football (see Table 5, Appendix E). The participants revealed that they decided to participate in football to improve existing skills, whereas others asserted that they wanted to maintain existing skill levels. Regular physical exercise has been associated with improved player tactics (Rico-Gonzalez *et al.*, 2022); thus, mastery could also influence talent development among female football players.

The interviews conducted with two female football players revealed experiences, challenges and benefits of participating in football. The responses from the interviews were presented in three themes, namely, societal and cultural expectations, economic barriers, and the psychological benefits of participating in football. These results are supported in the literature (Ljungmann *et al.*, 2024; Peng *et al.*, 2023). The commonly revealed societal perception of a female participating in football highlights a systemic gender inequality in football, aligning with the results obtained by (Bevan *et al.*, 2021; Zeng & He, 2024), and low salary and media coverage opportunities emerged as key factors negatively impacting the participation of females in Rwandan football. Another critical factor highlighted was economic status; both participants emphasized that limited financial resources held them back and hindered their free participation in Rwandan football. As reported elsewhere (Podlog *et al.*, 2015; Sarmiento *et al.*, 2018), the interview results concerning the psychological benefits for female football players indicated that participation increases competence, recognition, and football-specific skill development.

Implications of the Results

This study is important because it provides new insights into discussions regarding the development of female football talent both in Rwanda and globally. This study highlights

many problems faced by women athletes at different levels and proposes possible ways forward, hence contributing to empowerment for women in sports as well as other gender equality movements. While this research strives to shed light on female soccer talent development, several limitations and delimitations must be recognized. The paucity of information on this subject within the Rwandan context coupled with difficulties experienced while accessing junior elite players implies that findings should be interpreted cautiously because there are some constraints that must be considered.

Conclusion, Recommendations and Future Perspectives

This study assessed the factors that affect female footballers' talent development in Rwanda. The female participants provided their outlooks concerning factors such as competition, psychology, enjoyment, physical appearance, and mastery. The assessed factors were found to significantly affect talent development and participation in football among female players in Rwanda. Therefore, the results could lead to recommendations advocating for addressing financial limitations, ensuring the correct conduct of multimethod research, delving deeply into psychosocial factors, simultaneously addressing sociodemographic and psychosocial factors, and conducting more inquiries directly on the relationships among the aforementioned factors for conceptual understanding of the matter. The findings of the current research contribute to the body of knowledge by revealing how various factors influence social groups and the professional football experience, further revealing the need to include female football players in Rwanda in football development conversations.

Competing interests

The authors declare that they have no competing interests in connection with this research.

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Appendices

Questionnaire

Instruction: Please tick (✓) in the appropriate column to indicate the extent to which you agree or disagree with the statements below:

KEY: SD= Strongly Disagree (1); D= Disagree (2); N= Neutral (3); A= Agree; SA= Strongly Agree (4)

NO	I participate in Football	SD	D	N	A	SA
Competition (A)		1	2	3	4	5
1	To compete with others around me					
2	To be the best in the group					
3	To work harder than others					
4	Because I perform better than others					
5	To be fitter than others					
Psychological condition (B)		1	2	3	4	5
6	Because it helps me relax					
7	To better cope with stress					
8	To get away from pressure					
9	Because it acts as a stress release					
10	To take the mind off other things					
Enjoyment (C)		1	2	3	4	5
11	Because it is interesting					
12	Because it's fun					
13	Because I enjoy exercising					
14	Because it makes me happy					
15	Because I have time					
Physical appearance (D)		1	2	3	4	5
1	Because it helps maintain a healthy body					
2	Be physical feet					
3	To maintain physical healthy					
4	Because it keeps me healthy					
5	Improving cardiovascular fitness					
Mastery (E)		1	2	3	4	5
21	To get better at an activity					
22	To improve existing skills					
23	To do my personal best					
24	To obtain new skills/activity					
25	To keep the current skill level					