Journal of Sports and Physical Education Studies
ISSN: 2788-788X
DOI: 10.32996/jspes
Journal Homepage: www.al-kindipublisher.com/index.php/jspes

JSPES
AL-KINDI CENTER FOR RESEARCH AND DEVELOPMENT

| RESEARCH ARTICLE

FIFA Connect Adoption: A Mixed-Methods Study in Moroccan Women's Football

Fatima zahrae Eddif[1], El Mostafa Rajaallah[2] and Jemjami Nadia[3]
[1]*PhD Candidate, Research Team in Sports Sciences*
[2]*Accredited Associate Professor, Watch Lab for Emerging Technologies*
[3]*Accredited Associate Professor, Research Team in Sports Sciences, Hassan First University of Settat, Morocco*
Corresponding Author: Fatima zahrae Eddif, **E-mail**: f.eddif@uhp.ac.ma

| ABSTRACT
This study examines the adoption challenges of FIFA Connect within Moroccan women's football clubs with an aim of defining the factors that determine the use of technology as mandatory in structurally-dependent organizations. With Morocco on the verge of co-hosting the 2030 FIFA world cup, it is even more important to understand the barriers in digital transformation. The study fills an obvious gap in the literature related to sports management by questioning technology acceptance among structurally-dependent women-based entities in which structure is dominated by male parent clubs. Mixed-methods design was used which combined quantitative survey data of 21 administrative staff members in all National Women's Football League (LNFF) clubs with the qualitative thematic analysis of open-ended responses which were processed using the Tropes software. The study conceptualized the DeLone and McLean Information Systems Success Model through validated constructs of system quality, the quality of information, service quality, user satisfaction, and net benefits. The adoption determinants were analyzed using descriptive statistics, whereas qualitative coding was used to determine emergent patterns of challenges. The non-parametric methods were used due to the small sample size and non-normality. The quantitative analysis showed that Information Quality was the most decisive success factor (mean=4,0/5), and System Quality was the least rated (2,9/5) which is a critical performance issue. The most important predictor of User Satisfaction was Service Quality ($\beta = 0,816$, $R2 = 0,666$). Qualitative analysis identified three primary challenges: structural dependency on men's clubs, inadequate training provision, and technical support limitations. There was also an interesting Paradox of System Quality in which administrators ensured high rates of utilization despite technical performance. The convergence of the methodology shows that the technology adoption experiences in the women sports organizations are inherently based on governance structures. The results indicate that successful digital change in women football requires context-sensitive implementation strategies that can handle structural dependencies and ensure that information quality is guaranteed. When implementing mandatory technologies, sports federations are recommended to develop gender-sensitive solutions and introduce special support systems of dependent women sections.

| KEYWORDS
Adoption, Governance, Technology, Equity, Football, Management, Structure

| ARTICLE INFORMATION
ACCEPTED: 20 January 2025 **PUBLISHED:** 10 February 2026 **DOI:** 10.32996/jspes.2026.6.1.1

1. Introduction

The world of sport management is currently experiencing a rapid digital revolution, and advanced information systems (SIS) are permeating almost all areas of organizational activity. They have become indispensable technologies, which assist sports organizations in optimizing performance, enhancing institutional management, and increasing engagement with different stakeholders (Qi et al., 2024; Zambom-Ferraresi et al., 2018).The transition to the data-driven decision-making process requires multifaceted strategic, organizational, and cultural changes (Henriette et al., 2016; MaleeKittikumpanat, 2021)). Although the

introduction of integrated SIS may provide significant gains in the processing of the data and managerial effectiveness (Rajšp & Fister, 2020), this transition does not follow a universal pattern globally. Its broad application is often hindered by persistent challenges related cost-effectiveness, technological infrastructure, and incompatibility with existing organizational strategies (Cordery et al., 2023; Varmus et al., 2024).

Overall, while contemporary governing frameworks trend towards greater transparency and accountability (Bavaresco et al., 2024; Furtado et al., 2024) the digitalization of sports remains profoundly affected by existing power dynamics. In particular, entrenched gender structures still influence technology adoption in women's sports organizations (Lachance et al., 2024)

In the case of Moroccan women's soccer, these women's clubs are usually in a subordinate position to larger, male-dominated clubs. This organizational dependency poses structural contingencies that can hinder the adoption of mandatory new digital governance solutions. Previous studies on SIS adoption, often male-centric or Western-focused, have neglected these critical structural problems where a women's organization lacks full autonomy (Hu & Shu, 2024; Ranaweera et al., 2022) . Against the backdrop of global change, African football faces unique challenges in implementing digital solutions. The continent is currently undergoing significant transformation due to the FIFA Connect program, an all-encompassing player registration and management platform developed by FIFA to harmonize football governance.

The program's implementation is not uniform across African countries due to differences in technological infrastructure, administrative capacity, and digital literacy. Although some federations, like Ghana, have led the way in using FIFA Connect to provide coordinated services, most associations in Africa are hampered by inconsistent connectivity, limited technical capacities, and inadequate training (Dowling et al., 2018).

Morocco is a strategic example in this continent transformation. Being a home of FIFA Africa Bureau and one of the co-hosts of the 2030 FIFA World Cup, the country has placed itself as the leader in the modernization of football in the region. However, the Moroccan football is governed by a different set of rules: as a result of unpaid debt, transfer bans are common, and according to the Royal Moroccan Football Federation (FRMF) it is mandatory that all the financial conflicts be settled before the registration of a new player (Regulations on the Status and Transfer of Players Incl. Interim Regulatory Framework, 2025).This leads to clubs moving the dispute issue till the last days of transfer windows, and at that point, it becomes a frenzy of administrative action to lift bans and process registrations. These last-minute rushes cause significant operational loads to FIFA connect platform in times of window closure. Combination of these pressures of the operations with the deep-rooted structural gender inequalities complicates the implementation of digital solutions to Moroccan women football.

Women clubs are generally the sub units of male dominated parent groups that do not have their own administrative bodies, resources and administrative autonomy (Sheila Scraton et al., 1999).While male sections may have dedicated IT assistance and qualified staff, female sections often contend with shared resources, limited training opportunities, and lower priority in institutional hierarchies. These are factors that fundamentally shape the experience of women football administrators with compulsory digital systems (Beth G. Clarkson et al., 2022).To address this major gap, this paper explores the compulsory introduction of FIFA Connect in the Moroccan National Women's Football League. FIFA Connect is a global player registration and management system aimed at streamlining football governance. We use the established DeLone and McLean Information Systems (IS) Success model (Delone & McLean, 2003) to examine the implementation, focusing on system quality, Information quality, service quality, user satisfaction, and organizational impact. The D&M IS Success model provides a holistic framework that encompasses both technical and behavioral dimensions of IS success, making it suitable for evaluating complex systems like FIFA Connect. This comprehensive approach addresses the complex, multi-stakeholder nature of sports governance systems, making it more suitable than narrower models like TAM or task-specific models like TTF.

This research aims to inform a more equitable and successful digital transformation of women's sporting organizations globally by providing an evidence-based analysis of the regulatory environment and the manner in which governance frameworks determine the effectiveness of technology mandates in dependent organizations.

2. Material & methods

This study adopted a sequential explanatory mixed-methods approach (QUAN/QUAL), combining descriptive quantitative analysis of FIFA Connect adoption factors with in-depth qualitative thematic analysis of structural and contextual challenges. This triangulation provides a holistic understanding of technology implementation outcomes within the dependent organizational environment of Moroccan women's football. consistent with established methodological frameworks for complex organizational

phenomena. The quantitative phase utilized a cross-sectional survey design to test the hypothesized relationships of the DeLone & McLean Information Systems (IS) Success Model, a well-validated framework for evaluating information system efficacy (Delone & McLean, 2003; Wang & Wang, 2023). This was followed by a qualitative phase involving thematic analysis of open-ended responses to provide contextual depth and explanatory insights into the quantitative patterns. This triangulation approach is recommended to overcome the limitations of single-method studies and provide a holistic understanding of technology implementation within real-world organizational settings (Jick, 1979).

1.1. Participants

The target population consisted of 42 administrative staff members across all professional women's football clubs registered in the Moroccan National Women's Football League (LNFF). Sample size determination followed Taherdoost's (2016) guidelines for small finite populations. According to Taherdoost's reference table for population sizes under 50, with a 95% confidence level and 5% margin of error, a minimum sample of n=44 would be ideal for a population of 50. However, (Taherdoost, 2016, p. 26) explicitly acknowledges that "*in most social and management surveys, the response rates for postal and e-mailed surveys are very rarely 100%*" *and notes that sample sizes* "reflect the number of obtained responses, and not necessarily the number of questionnaires distributed. "*For specialized professional populations with limited accessibility, response rates no 40-60% are common and acceptable in organizational research"* (Baruch & Holtom, 2008). A census approach invited all 42 administrators to participate, achieving n=21 respondents (50% response rate). While below the theoretical ideal, this represents a realistic and substantial sample for a bounded population study, providing adequate data for exploratory descriptive analysis of the entire LNFF administrative structure.

Respondents held the following administrative roles: Club Administrator (n=14, 66.7%), FIFA Connect Administrator (n=4, 19.0%), General Secretary (n=1, 4.8%), and other administrative roles (n=2, 9.5%). System usage experience showed 90.48% (n=19) with over two years of FIFA Connect experience, 4.76% (n=1) with 1-2 years, and 4.76% (n=1) with 6 months to 1 year, indicating substantial operational maturity.

1.2. Procedure

Data collection occurred February 15-28, 2025, immediately following the winter transfer window closure (January 31, 2025) to capture fresh user experiences during peak system engagement. Each club received a unique, anonymous questionnaire link distributed via the researcher's university email (f.eddif@uhp.ac.ma) rather than official FRMF channels, preserving voluntary participation without institutional pressure. One reminder was sent after seven days. All responses were processed using randomized participant codes ensuring complete confidentiality. Average completion time was 10 minutes.

1.3. Instruments and Measures

The study operationalized the (Delone & McLean, 2003)Information Systems Success Model comprising six constructs **table 1** presents the complete operationalization framework. Reliability assessment used Cronbach's alpha with thresholds: $\alpha \geq 0.70$ (ideal), $\alpha \geq 0.60$ (acceptable for exploratory research; Hair et al., 2019). Two-item constructs required inter-item correlation $r \geq 0.50$ (Eisinga et al., 2013).

Table 1 :Construct Measurement and Reliability Assessment

Construct	Final Items (n)	Sample Item	Cronbach's α	Status	Source
Information quality (IQ)	3	Club-specific needs (BSM), Procedural compatibility (PRS), Context adaptation (PRST)	**0.938**	Ultra-reliable	(Delone & McLean, 2003; Wang & Wang, 2023)
Net Benefits (NETB)	4	Time reduction (RT), Error reduction (RE), License management (AGL), File tracking (FDJ).	**0.889**	Excellent	(Delone & McLean, 2003; Seddon, 1997)
Service Quality (SEQ)	3	Training adaptation (ADF), Support accessibility (AST), Support efficiency (EffST)	**0.839** (n=17)[a]	Excellent	(Pitt et al., 1995)
System Quality (SQ)	2[b]	Processing speed (Speed), System stability (Stability)	**0.757**	Good	(Delone & McLean, 2003; Fred D. Davis, 1989)
User Satisfaction (SATI)	2	Overall satisfaction (SAT), Global evaluation (EvaluationSI)	**0.712** (r=0.564)	Good	(Bhattacherjee, 2011; Oliver, 1980)

Intensity of Use (IU)	1	"Do you use all FIFA Connect functionalities?" (1=None to 5=All)	N/A[c]	Single-item	(Burton-Jones & Straub, 2006).

- Reliability Assessment: Cronbachs alpha (α) was used to assess the internal consistency of multi-item constructs, and it is accepted that 0.70 (ideal) and 0.60 (acceptable in exploratory studies) should be taken as the criteria (Hair et al., 2019). The reliability ratings of all the multi-item constructs were between the ranges of Good and Excellent, thus supporting the internal consistency of the measuring instrument in the specified context.
- Two-Item Construct (User Satisfaction): In the case of the bi-item User Satisfaction scale, the inter-item correlation was r=0,564. In general, a correlation coefficient of r of 0,50 and above is considered acceptable when it comes to two item constructs as such and justifies their reliability (Eisinga et al., 2013).
- Scale Refinement (System Quality): The original 4-item System Quality scale had poor reliability (α = 0.564). Items that performed worse on the scale purification, namely Comprehension and Intuitive were discarded according to the (Churchill, 1979) purification scale criteria. The resulting 2-item scale (Processing speed, System stability) provided a satisfactory reliability (α = 0,757).
- Single-Item Measure (Intensity of Use): The use of single-item measure of Intensity of Use (IU) is theoretically justifiable because of the presence of concrete, unambiguous constructs in obligatory-use situations where extent of use is a clear concept to the respondents (Bergkvist & Rossiter, 2007; Venkatesh et al., 2016) It is a strategy that minimizes the burden of respondents and maintains conceptual validity.
- Sample Size Change (Service Quality): Service Quality (SEQ) was analyzed using a sample of n= 17. Such a small sample was due to a pattern of a missing data on one item (Training adaptation ADF), which was only given to respondents who had undergone formal training on the system. This selective administration guaranteed relevance of responses as well as improved quality of data.

1.4. *Data Collection and Analysis*

1.4.1. Descriptive and Bivariate Analysis

1.4.1.1. Quantitative analysis

Quantitative analysis was conducted with the use of IBM SPSS Statistics Version 29.0. After the screening of the data, the means and standard deviations were calculated to profile the variables using descriptive statistics. Due to the small sample size (N = 21 using the entire data set and N = 17 using SEQ models) and the detection of non-normality based on the Shapiro-Wilk tests of significant variables (e.g., SATI, p =0,003; QI, p = 0,013), robust analysis was used, which is recommended in small samples, and non-normal variables (Field, 2013). Bivariate relationships were evaluated using the Spearman rank-order correlations (rho), which is a non-parametric test that does not presuppose that the data are normally distributed.

Considering the sample size limitation, parsimonious model-building was employed since the study did not have sufficient time to overfit its model but provide a statistically significant power (Babyak, 2004).It was tested based on the two distinct ordinary least squares (OLS) regression models to examine the core theoretical pathways and is in line with the DeLone and McLean model:

- **Model 1 (n=17):** $SATI = \beta_0 + \beta_1(SEQ) + \varepsilon$
- **Model 2 (n=21):** $NETB = \beta_0 + \beta_1(SATI) + \beta_2(IQ) + \varepsilon$

Model 1 tested the effect of Service Quality on User Satisfaction; **Model 2** tested the effects of User Satisfaction and Information quality on Net Benefits. To ensure robust inference despite the small sample size and potential non-normality, non-parametric bootstrapping with 5,000 samples was used to generate bias-corrected and accelerated (BCa) 95% confidence intervals for all regression coefficients (Efron & Tibshirani, 1994). This approach provides more reliable estimates and significance testing when parametric assumptions are violated (Field, 2013).Regression diagnostics included Variance Inflation Factor (VIF) for multicollinearity (threshold VIF < 5; (Hair et al., 2019), Durbin-Watson statistic for autocorrelation (ideal ≈ 2), and visual inspection of residual plots for homoscedasticity and normality.

1.4.1.2. Qualitative Analysis

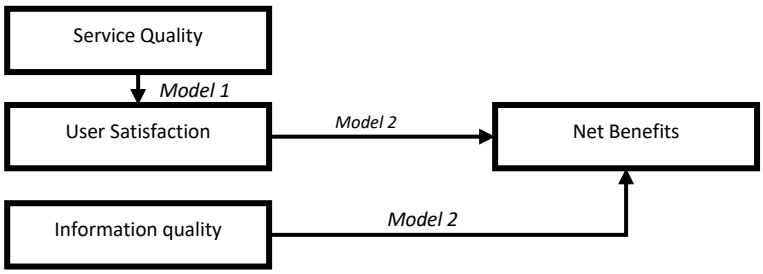
Open-ended responses underwent thematic analysis following (Braun & Clarke, 2006). Tropes software performed lexical analysis to identify keyword frequencies and semantic patterns. Inductive thematic coding followed five stages: (1) data familiarization, (2) initial coding, (3) theme development, (4) theme refinement, and (5) theme definition. Qualitative themes were integrated with quantitative findings using an explanatory sequential mixed-methods approach (Cresswell et al., 2024).

3. Results

Based on the DeLone & McLean IS Success Model and considering sample size constraints, this study tested two parsimonious regression models examining key relationships within the framework. **Fig.1** illustrates the research Model Based on DeLone & McLean IS Success Framework. Bold paths indicate relationships tested through regression analysis ***(Model 1: SEQ→SATI; Model 2: SAT+IQ→NETB***). Dashed constructs (SQ, IU) were measured for descriptive purposes but not included in regression models due to sample size limitations.

Given sample size constraints (N=21 overall; n=17 for service quality analyses), we employed a parsimonious modeling strategy testing two core pathways identified in prior mandatory-use IS research (Petter et al., 2008; Seddon, 1997) : (1) the relationship between service quality and user satisfaction (**Model 1**), and (2) the combined effects of user satisfaction and Information quality on net benefits (**Model 2**).

Fig. 1: Research Model Based on DeLone & McLean IS Success Framework



3.1. Qualitative Results

(01) Descriptive Statistics

Descriptive statistics for all constructs are presented in **Table 2**. Mean scores indicated generally positive perceptions across most dimensions. Information quality demonstrated the highest mean (M=4,00, SD=0,75), followed by User Satisfaction (M=4,19, SD=0,72) and Service Quality (M=4,14, SD=0,78). System Quality showed the lowest mean (M=2,90, SD=1,00), suggesting technical performance concerns among administrators. Intensity of Use demonstrated high engagement levels (M=4,05, SD=0,81), indicating administrators utilized most available functionalities.

Table 2 :Descriptive Statistics for Study Constructs

Construct	N	Mean (M)	Standard Deviation (SD)	Minimum	Maximum
System Quality (SQ)	**21**	**2,90**	**1,00**	**1,00**	**4,50**
Information quality (IQ)	**21**	**4,00**	**0,75**	**1,67**	**5,00**
Service Quality (SEQ)	**17[a]**	**4,14**	**0,78**	**2,00**	**5,00**
Intensity of Use (IU)	**21**	**4,05**	**0,81**	**2,00**	**5,00**
User Satisfaction (SATI)	**21**	**4,19**	**0,72**	**2,00**	**5,00**
Net Benefits (NETB)	**21**	**3,82**	**071**	**2,00**	**5,00**

[a] n=17 due to missing data on training adaptation item (answered only by respondents who received formal training).

Bivariate Relationships

The relationships between the core constructs of the DeLone & McLean IS Success Model were examined using Spearman's rank-order correlation analysis due to violations of normality assumptions in the data. The correlation matrix is presented in **Table 3**.

Table 3:Spearman Correlation Matrix for Primary Study Variables

Variable	1	2	3	4	5	6	N	M	SD
SQ	-						21	2.90	1.00
IQ	-0.19	-					21	4.00	0.75

SEQ a	0.12	0.86**	-				17	4.14	0.78
SATI	-0.06	0.61**	0,74**	-			21	4.19	0.72
NETB	-0.18	0.52*	0,42	0,61**	-		21	3.82	0.71
IU	-0.29	0.41	0,32	0,11	0,26	-	21	4.05	0.81

*[a]n=17 due to missing data.*Note: *p < .05, **p < .01 (two-tailed). SQ=System Quality, IQ=Information quality, SEQ=Service Quality, SATI=User Satisfaction, NETB=Net Benefits, IU=Intensity of Use. **

(02) Regression Analysis

To test the hypothesized relationships from the DeLone & McLean IS Success Model while respecting sample size limitations, two separate parsimonious regression models were analyzed using bootstrapping with 5,000 samples.

3.1.02.1. Model 1: Predictors of Intensity of Use

A simple linear regression was conducted to predict User Satisfaction (SATI) based on Service Quality (SEQ) (n=17). The regression model was statistically significant, F (1, 15) = 29,95, p < 0,001. The coefficient of determination was R^2 = 0,666, **Table 4** meaning that 66,6% of the variance in User Satisfaction was explained by Service Quality. As shown in **Table 5**, Service Quality was a significant positive predictor of User Satisfaction (β = 0,816, p < 0,001).

Table 4:Model Summary for Predicting User Satisfaction

Model	R	R2	Adj.R2	SE	ΔR2	F	df1	df2	Durbin-Watson
1	0,816	0,666	0,644	0,457	0,666	29,951	1	15	2,563

The adjusted R^2 (Adj.R^2=0.644) is slightly lower than R^2 (0.666) because it penalizes model complexity by accounting for sample size and number of predictors, confirming that Service Quality genuinely explains 64.4% of variance in User Satisfaction without overfitting.

Table 5:Regression Coefficients for Model 1: Service Quality Predicting User Satisfaction

	B	SE	β	t	sig	Tolerance	VIF
(Constante)	0,841	0,614		1,370	0,191		
SEQ	0,799	0,146	0,816	5,473	0,000	1.000	1.000

Note. N = 17. Dependent Variable: User Satisfaction (SATI). BCa CI = Bias-Corrected and Accelerated Bootstrap Confidence Interval (5,000 samples). β = Standardized coefficient.

3.1.02.2. Model 2: Prediction of Net Benefits

A multiple linear regression was conducted to predict Net Benefits (NETB) based on User Satisfaction (SATI) and Information quality (IQ) (n=21). The overall regression was statistically significant, F (2, 18) = 10,37 ; p = 0,001. The model explained 53.5% of the variance in Net Benefits (R^2 = 0,535, Adjusted R^2 = 0.484). As detailed in **Table 5**, User Satisfaction was a significant predictor of Net Benefits (β = 0,518, p = 0,050). In contrast, Information quality was not a significant predictor when included alongside User Satisfaction (β = 0,256, p = 0,312).

Table 6 :Model Summary for Predicting Net Benefits (Model 2)

Model	R	R2	Adj.R2	SE	ΔR2	F	df1	df2	Durbin-Watson
2	0,732a	0,535	0,484	0,50849	0,535	10,372	2	18	2,077

Note. Predictors: User Satisfaction (SATI), Information quality (QI). Dependent Variable: Net Benefits (NETB). SE = Standard Error of the Estimate. Durbin-Watson = 2.077.

The adjusted R^2 (Adj.R^2=0.484) compared to R^2 (0.535) validates that both predictors meaningfully contribute to explaining Net Benefits, with the adjustment accounting for the two-predictor model complexity and confirming 48.4% of explained variance represents genuine predictive power rather than sample-specific artifact.

Table 7 :Regression Coefficients for Model 2: User Satisfaction and Information quality

	B	SE	β	t	sig	Tolerance	VIF

N = 21. Dependent Variable: Net Benefits (NETB). BCa CI = Bias-Corrected and Accelerated Bootstrap Confidence Interval (5,000 samples). β = Standardized coefficient

(Constante)	0,710	0,692		1,026	0,318		
SATI	0,512	0,244	0,518	2,102	0,050	0,425	2,352
IQ	0,241	0,232	0,256	1,041	0,312	0,425	2,352

3.1.02.3. Standardized Residuals vs. Predicted Values for SATI Regression Model

The scatterplot **Fig.2** demonstrates a random distribution of standardized residuals around the horizontal axis (mean = 0) with no systematic pattern, confirming homoscedasticity and meeting key regression assumptions. The absence of funnel-shaped patterns or trends validates the linear relationship between SEQ (predictor) and SATI (dependent variable). This graphical evidence supports the statistical significance ($p < 0,001$) and robustness of Model 1 ($R^2 = 0,666$).

Fig. 3 : SATI Regression Model Diagnostic Plot

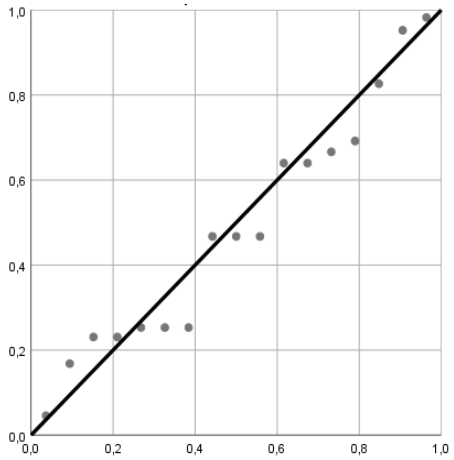
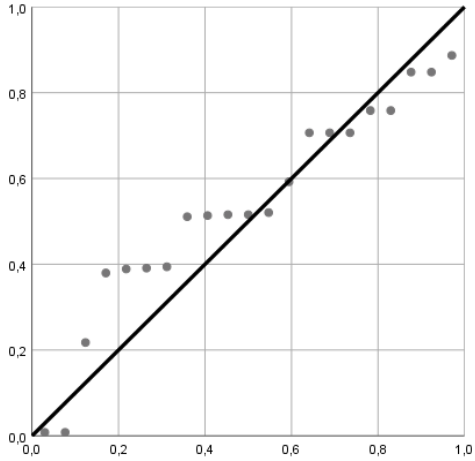


Fig. 2 : NETB Regression Model Diagnostic Plot



3.1.02.4. Standardized Residuals vs. Predicted Values for NETB Regression Model

Fig.3 represent the residuals exhibit a uniform spread across predicted values without curvature, clustering, or heteroscedasticity, satisfying the assumption of constant error variance. This pattern confirms the reliability of the multiple regression model **($NETB = \beta_0 + \beta_1 SATI + \beta_2 IQ$)**, where both predictors collectively explain 53.5% of variance ($R^2 = 0,535$). The Durbin-Watson statistic (2,077) and random residual dispersion further validate the model's suitability for analyzing NETB outcomes.

3.2. Qualitative Results

Open-ended responses from 21 clubs underwent thematic analysis following Braun and Clarke's (2006) five-stage approach. Tropes software 1performed lexical analysis to identify keyword frequencies and semantic patterns within the 82-unit corpus.

(01) Data Familiarization and Initial Coding

The familiarization phase involved reading all 21 responses to identify recurring concepts. Initial coding generated six primary categories aligned with ISSM dimensions: User Satisfaction (SATI), Information quality (IQ), Service Quality (SEQ), Use (USE), Net Benefits (NETB), and System Quality (SQ). Tropes software identified 82 meaning units across these categories.

(02) Theme Development: Distribution by ISSM Dimensions

The coding process revealed distinct thematic patterns corresponding to ISSM constructs (Table 8):

Fig. 4 : Thematic Distribution of Perceived Benefits

ISSM Dimension	Category	Frequency	%	Representative Terms
User Satisfaction	SATI	23	28.0%	player, age, management, qualification, situation

[1] *Tropes is software developed by Pierre Molette and Agnès Landré based on the work of Rodolphe Ghiglione. Copyright 1995-2018. All rights reserved.*

Information quality	IQ	15	18.3%	information, detail, transparency, credibility, exactness
Service Quality	SEQ	14	17.1%	ease, facility, simplicity, manipulation, behavior
Use	USE	14	17.1%	monitoring, tracking, registration, treatment, dossier
Net Benefits	NETB	13	15.9%	management, organization, governance, improvement
System Quality	SQ	3	3.7%	speed, rapidity
Total		**82**	**100%**	

(03) Theme Refinement: Reference Universe Analysis

Theme 1: User Satisfaction (28% of references)

The dominant theme reflected operational needs fulfillment centered on player-related processes. Administrators emphasized comprehensive player lifecycle management:

a. *"le suivi de la qualification de nos joueurs" (R02) - (**tracking** the **qualification** of our **players**).*
b. *"suivre le parcours du joueur via outil recherche de personne et passeport du joueur" (R06)- (**follow** the **player's journey** via the person search tool and **player passport**).*
c. *"le suivi des dossiers des joueurs" (R16)-(**tracking player files**).*

This actor-centric design addresses core administrative responsibilities including qualification tracking, transfer monitoring, and documentation management. The recurrence of "suivi" (tracking/monitoring) across multiple respondents indicates that **continuous visibility into player status represents the system's primary value**.

Theme 2: Information quality (18.3% of references)

Data quality emerged as a critical benefit, with administrators valuing precision and accessibility:

d. *"fifa connect a donne des informations minutieux sur les joueurs" (R19)- (FIFA **Connect provided meticulous information** about **the players**)*
e. *"la situation exacte des joueuses les informations personnelles" (R18) - (the **exact situation** of **players**, **personal information**)*
f. *"credibilite transparence et rapidite dans le traitement des dossiers" (R08)- (**credibility, transparency and speed in processing files**).*

The use of qualitative descriptors ("*minutieux*" meticulous, "*exacte*" exact, "*transparence*" transparency) demonstrates that users value precision and comprehensiveness beyond mere data availability. This aligns with the high quantitative IQ scores (M=4.00).

Theme 3: Service Quality (17.1% of references)

Usability facilitated system adoption despite technical constraints. The recurrence of "facilité" (9 variations: facilite, facile, faciliter) demonstrates ergonomic design as a core benefit:

g. *"simple a manipuler simplicite entrer les donnees des joueurs" (R19)- (**simple to manipulate**, **simplicity** entering player data).*
h. *"facilite utilisation et rapidite des transferts" (R12)- (ease of **use and speed** of transfers)*
i. *"acces facile pour les information" (R16)- (easy **access to information**)*

These references emphasize **process simplification** rather than technical sophistication, suggesting the system successfully reduces administrative friction in routine tasks.

Theme 4: Use - Operational Application (17.1% of references)

Communication capabilities emerged as an unexpected but valued benefit:

j. *"communication avec les autres clubs concernant les joueurs et les cadres" (R20)-(**communication** with other clubs **regarding players and staff**)*
k. *"obtenir des informations et age des joueuses autres clubs via outil demande de recherche" (R06)- (**obtain information and age of players from** other clubs via the **search request tool**)*
l. *"contact plus ou moins facile par les autres clubs" (R16)- (more or **less easy contact** with other clubs)*

This theme reveals that FIFA Connect functions as a network infrastructure, enabling previously difficult inter-organizational coordination—a systemic benefit beyond individual club operations.

Theme 5: Net Benefits - Organizational Impact (15.9% of references)

Institutional-level improvements manifest through:

m. *"meilleure organisation administrative" (R06)- (**better administrative organization**)*

n. *"bonne gouvernance pour qualification des joueurs" (R14)- (**good governance** for player qualification)*
o. *"professionnel" (R13)- (**professional**)*

These references indicate the system contributes to institutional professionalization, elevating women's clubs' administrative standards and external credibility a particularly significant outcome in contexts seeking legitimacy.

(01) Theme Refinement: Semantic Relationship Analysis

Following initial theme development, semantic relationship analysis examined co-occurrence patterns, verb usage, and adjectival qualifiers to refine thematic boundaries and validate emerging constructs.

Verb Analysis

Verb analysis revealed minimal verbal construction, reflecting the **nominal nature of responses** where participants provided concise, noun-based answers rather than elaborated statements. Only two primary verbs emerged:

Fig. 5 : Verb Frequency Distribution

Verb	Frequency	Rate	Interpretation
Avoir (to have)	5	0,208%	State/possession verb
Faciliter (to facilate)	4	0,167%	Action verb - key benefit

Despite limited verbal construction, the verb **"faciliter"** (to facilitate) emerged as conceptually significant, appearing in benefit contexts:

p. *"faciliter le service dans les informations sur les joueurs" (R10)- (**facilitate the service in player information)***
*q. "facilite utilisation et rapidite des transferts" (R12)- (**ease of use and speed of transfers**)*
r. "facilite de recrutement des joueurs" (R17)- (**ease of player recruitment)**

This recurrence confirms that **process facilitation constitutes a primary value proposition** of FIFA Connect, corroborating the prominence of the Service Quality dimension (SEQ: 17.1% of references). The dominance of "faciliter" over other action verbs suggests users conceptualize the system primarily as an **enabler rather than a transformer** of work processes.

Adjectival Analysis

Adjectives revealed qualitative dimensions of perceived benefits. Analysis identified evaluative terms characterizing system attributes and outcomes (data not shown in provided exports, but referenced in category composition):

- **Qualitative descriptors of information**: "minutieux" (meticulous), "exacte" (exact), "personnelles" (personal) - supporting the Information quality theme
- **Ease descriptors**: "facile" (easy), "simple" (simple), "accessible" (accessible) - reinforcing the System Quality-Ease theme
- **Evaluative terms**: "meilleure" (better), "bonne" (good) - indicating improvement perceptions supporting Net Benefits

The prevalence of positive evaluative adjectives across themes suggests **overall system satisfaction**, consistent with the high SAT frequency (28%).

3.3. Mixed-Methods Integration

Triangulation did provide three major findings:

1. **System Quality Paradox**: Low scores in weaker System Quality (M = 2,90) were in opposition with the low levels of qualitative attention (3,7%), implying that users valued the functional advantages over the technical performance of a system in a compulsory setting.

2. **The success of Information quality**: High Information quality (IQ) scores (M = 4,00) corresponded to the response of qualitative appreciation (18,3%), proving that the accuracy of data is the driver of value, even with structural constraints.

3. **Service Quality Mediation**: The Mediation between Service Quality and User Satisfaction (SEQ-SATI) showed the close association between Service Quality and User Satisfaction (β= 0,816), which was supported by qualitative focus on the ease of use (facilite with 9 occurrences).

This indicates that the DeLone and McLean model needs to be used contextually to the mandatory-use environment, where technical excellence is subservient to functional adequacy and information integrity.

4. Discussion

The mixed methods study of FIFA connect adoption among Moroccan women football clubs has shown Information Quality to be the most successful factor (M= 4.00), and this finding is supported by quantitative scores as well as qualitative appreciation (18.3 percent of thematic references). In the case of the administrators, the emphasis was always on the data accuracy and transparency, which is a key value driver, meaning that a correctly designed information architecture can create a perceived value even in a

limited organizational setting. The discovery builds on the body of the existing literature on IS success by showing that information integrity is more important than technical sophistication when mandatory use is required and the users have no other options to adopt. The practical implication is thus apparent: the sport federations that have adopted the mandatory systems in dependent organizations must focus on the quality of information and not on the technical improvements in performance.

Nevertheless, this paper also discovered a Service Quality paradox, which is despite the fact that Service Quality was found as the best predictor of User Satisfaction (β= 0,816 / R^2=0.666), qualitative data showed discrepancies in training accessibility because only 17 out of 21 administrators had received formal FIFA Connect training. It is possible that this difference indicates that usability design may partially compensate the lack of training but still cannot be used instead of an extensive support infrastructure. Therefore, federations will need differentiated support policies that accommodate different levels of digital literacy and organizational capacity and leave the generic training protocols behind in favor of adaptive learning models that integrate context-specific tutorials and specific help-desk services targeting women administrators of their clubs (Qi et al., 2024; Varmus et al., 2024).

The main result of this research is the System Quality Paradox, according to which administrators gave the lowest scores to the System Quality (M = 2.90) although they dedicated minimum qualitative attention to the technical performance (3.7 per cent of references). However, they had high scores in engagement (Intensity of Use: M 4.05) and perceived organizational value (Net Benefits: M= 3.82). Such incongruity is a challenge to the fundamental assumptions of technology-acceptance (Fred D. Davis, 1989; Venkatesh et al., 2016). according to which the quality of the system is a primary determinant of adoption. The current findings imply that in the structurally dependent mandatory-use situations, users resort to the strategy of pragmatic acceptance a psychological change whereby technical deficiencies are framed as environmental constraints instead of adoption barriers (Cordery et al., 2023; Cresswell et al., 2024).The users, thus, attach the achievable gains to technical perfection and this renders their organizational resilience in the pursuit of the quality of information and functional outputs and also in adapting to technical constraints. Pragmatic acceptance though, is an institutional compliance doctrine, not an institutional adequacy of the systems, meaning that federations should recognize that high usage rates may be hiding some technical dissatisfaction.
The long-term viability of the sustainable system, therefore, implies that the consideration of not only functional requirements but also the structural constraints that force users to accept the less-than-optimal technical performance should be themselves considered. In addition, professionalization of the organizations was found as a salient legitimizing advantage of the study with 15.9% references reported to have improved the organization and governance of the organization. The above results suggest that institutional legitimacy can be provided through mandatory systems in instances where technical implementation is still flawed. To the clubs of Moroccan women who want to be identified among the male-dominated football institutions, FIFA Connect has provided the standardization and credibility beyond the effectiveness of its operations, which means that digital transformation in the marginalized sports activities might thrive through symbolic adherence to the principles of global governance, but no longer on its ability to maximize performance (DiMaggio & Powell, 1983).

This evidence requires a revision of the DeLone and McLean Information System Success Model when applied to the situation of mandatory-use contexts in structurally dependent organizations, i.e. in cases where pragmatic acceptance replaces voluntary adoption dynamics. To ensure successful outcomes of sport federation adoption of mandatory digital platforms in women organizations, there is the need to institute gender sensitive implementation structures that consider six salient policy dimensions: (1) invest in the quality of information architecture, focusing on data accuracy and contextual relevance rather than technical sophistication; (2) develop differentiated support systems and training that will reduce structural dependencies and resource asymmetries; (3) use user-centered design principles to reduce cognitive load and dependence on formal training infrastructures; (4) expand measures of success beyond usage rates to include institutional legitimacy outcomes and indicators of These suggestions emphasize that digital equity in women sports does not necessitate improved systems, but rather reorganized governance structures which redistribute resources, acknowledge context-dependent limitations, and is actively combative to institute institutionalized power-relations that reproduce technological disadvantage. Future studies ought to examine the question of whether pragmatic acceptance is a form of organizational resilience or resignation, and whether interventions aimed at changing the structural dependencies that constrain the technological experiences of women in sports organizations can be implemented.

5. Conclusions

The current paper shows that the implementation of context-specific strategies centering on the quality and usability of information and the lack of technical complexity is necessary in order to achieve successful digital transformation in the field of women football. Due to the need to modify the DeLone and McLean IS Success Model to suit the obligatory-use settings in structurally dependent organizations; the analysis reveals that the pragmatic acceptance replaces the voluntary adoption dynamics. This study produces six policy suggestions that can be adopted by sports federations that entail compulsory digital platform in

structurally dependent women organizations. First, investments must be made in the quality of information architecture rather than technical performance improvements, with a more substantial emphasis on data accuracy, transparency, and contextual relevance (Varmus et al., 2024). Federations should create gender-sensitive implementation frameworks, which can overcome structural dependencies and resource asymmetries, such as differentiated support and specific training (Lachance et al., 2024).Third, the principles of user-centered design are to be used to avoid the overload of cognition and to decrease the dependence on the formal training infrastructure (Qi et al., 2024; Ranaweera et al., 2022). Fourth, the indicators of success need to be extended to include the results of institutional legitimacy, acknowledging the role of system adoption in the professionalization of the organization and its image credibility (Bavaresco et al., 2024; Furtado et al., 2024). Fifth, continuous surveillance systems must be put in place that will identify and manage the arising disparities in technology use, training and quality of support across the organizations between women and men. Lastly, the policy paradigms should consider the possibility of pragmatic acceptance as a sign of resignation instead of contentment, which requires active involvement with women club leaders to define unmet demands and organizational obstacles. The tenets of these recommendations are that: digital equity in women sports necessitates restructured governance mechanisms that redistribute resources, understand context-based limitations and proactively reverse institutionalized forces that reproduce technological disadvantage.

More importantly, digital transformation efforts are prone to reproduce gender inequities in the event that such endeavors are carried out without paying proper attention to structural reliance and resource inequalities. Significant inclusion thus requires restructuring of governance, fair distribution of resources and reducing the effects of power that influence the technological experiences of marginalized organizations. Further studies would help clarify the question of whether pragmatic acceptance is a sign of organizational resilience or resignation, and explore ways of changing structural dependencies. Digital equity in women sports would only be achieved through better systems but also through the establishment of strong governance structures that would help all organizations to make the best of the technology.

Funding: This research received no external funding.

Conflicts of Interest: The authors declare no conflict of interest.

ORCID iD: *[1]0009-0005-1504-705X- [2]0000-0002-3604-2275*

Publisher's Note: All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers.

Authors' Contribution *Fatima Zahrae EDDIF*: Initiated the study, framed the research questions, reviewed literature, and wrote sections of the methodology, designed the instrument, collected data, and drafted the initial manuscript.
El Mostafa RAJAALLAH: Contributed to the data analysis, and sections of the discussion. *Nadia JEMJAMI*: Contributed the conclusion and recommendations, and ensured adherence to journal submission guidelines.

References

[1] Babyak, M. A. (2004). What you see may not be what you get: A brief, nontechnical introduction to overfitting in regression-type models. *Psychosomatic Medicine*, *66*(3), 411–421. https://doi.org/10.1097/01.psy.0000127692.23278.a9

[2] Baruch, Y., & Holtom, B. C. (2008). Survey response rate levels and trends in organizational research. *Human Relations*, *61*(8), 1139–1160. https://doi.org/10.1177/0018726708094863

[3] Bavaresco, G., Dickson, G., Camargo, P., Santos, T., & Marinho Mezzadri, F. (2024). Transparency and accountability in Brazilian National Sport Organisations. *Cogent Social Sciences*, *10*(1), 2355560. https://doi.org/10.1080/23311886.2024.2355560

[4] Bergkvist, L., & Rossiter, J. R. (2007). The Predictive Validity of Multiple-Item versus Single-Item Measures of the Same Constructs. *Journal of Marketing Research*, *44*(2), 175–184. https://doi.org/10.1509/jmkr.44.2.175

[5] Beth G. Clarkson, Keith D. Parry, Alex Culvin, & Stacey Pope. (2022). An institutional analysis of gender (in)equalities, COVID-19 and governance of elite women's football in Australia, England and the USA | Sport, Business and Management | Emerald Publishing. *Sport, Business and Management: An International Journal*, *12*(4), 459–478. https://doi.org/10.1108/SBM-01-2021-0004

[6] Bhattacherjee, A. (2011). *Understanding Information Systems Continuance: An Expectation-Confirmation Model1*. https://dx.doi.org/10.2307/3250921

[7] Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

[8] Burton-Jones, A., & Straub, D. W. (2006). Reconceptualizing System Usage: An Approach and Empirical Test. *Information Systems Research*, *17*(3), 228–246.

[9] Churchill, G. A. (1979). A Paradigm for Developing Better Measures of Marketing Constructs. *Journal of Marketing Research*, *16*(1), 64. https://doi.org/10.2307/3150876

[10] Cordery, C. J., Goncharenko, G., Polzer, T., McConville, D., & Belal, A. (2023). NGOs' performance, governance, and accountability in the era of digital transformation. *The British Accounting Review*, *55*(5), 101239. https://doi.org/10.1016/j.bar.2023.101239

[11] Cresswell, K., Sullivan, C., Theal, J., Mozaffar, H., & Williams, R. (2024). Concerted adoption as an emerging strategy for digital transformation of healthcare-lessons from Australia, Canada, and England. *Journal of the American Medical Informatics Association: JAMIA*, *31*(5), 1211–1215. https://doi.org/10.1093/jamia/ocae034

[12] Delone, W. H., & McLean, E. R. (2003). The DeLone and McLean Model of Information Systems Success: A Ten-Year Update. *Journal of Management Information Systems*. https://www.tandfonline.com/doi/abs/10.1080/07421222.2003.11045748

[13] DiMaggio, P. J., & Powell, W. W. (1983). The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review*, *48*(2), 147–160. https://doi.org/10.2307/2095101

[14] Dowling, M., Leopkey, B., & Smith, L. (2018). Governance in Sport: A Scoping Review. *Journal of Sport Management*, *32*(5), 438–451. https://doi.org/10.1123/jsm.2018-0032

[15] Efron, B., & Tibshirani, R. J. (1994). *An Introduction to the Bootstrap*. Chapman and Hall/CRC. https://doi.org/10.1201/9780429246593

[16] Eisinga, R., Grotenhuis, M. te, & Pelzer, B. (2013). The reliability of a two-item scale: Pearson, Cronbach, or Spearman-Brown? *International Journal of Public Health*, *58*(4), 637–642. https://doi.org/10.1007/s00038-012-0416-3

[17] Field, A. (2013). *Discovering Statistics Using Ibm Spss*. SAGE Publications Ltd.

[18] Fred D. Davis. (1989). *Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology on JSTOR*. *13*(3), 319–340. https://doi.org/10.2307/249008

[19] Furtado, S., Piggin, J., Goncalves, G. H. T., & Mezzadri, F. (2024). The Modernization Process in Brazilian National Olympic Federations. *Journal of Global Sport Management*, *9*(3), 485–508. https://doi.org/10.1080/24704067.2022.2136101

[20] Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (Eighth edition). Cengage.

[21] Henriette, E., Feki, M., & Boughzala, I. (2016). *Digital Transformation Challenges*.

[22] Hu, Y., & Shu, S. (2024). Exploring the dynamics of governance: An examination of traditional governance and governance innovation in the United States professional sports leagues. *Heliyon*, *10*(13), e32883. https://doi.org/10.1016/j.heliyon.2024.e32883

[23] Jick, T. D. (1979). Mixing Qualitative and Quantitative Methods: Triangulation in Action. *Administrative Science Quarterly*, *24*(4), 602–611. https://doi.org/10.2307/2392366

[24] Lachance, E. L., Kerwin, S., & MacCharles, J. D. (2024). *Diversity, Equity, and Inclusion Policies in Canadian Nonprofit Sport Organizations: A Management-by-Values Approach*. https://doi.org/10.1123/jsm.2024-0064

[25] MaleeKittikumpanat, E. A. (2021). *A Conceptualized Model of Digital Transformation for Sport Organization in Thailand*. https://www.semanticscholar.org/paper/A-Conceptualized-Model-of-Digital-Transformation-in-MaleeKittikumpanat/9e4ffdb3fcb3ef150534b9fcd5c53771cdbeb6e2

[26] Oliver, R. L. (1980). A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions. *Journal of Marketing Research*, *17*(4), 460–469. https://doi.org/10.2307/3150499

[27] Petter, S., Delone, W., & McLean, E. (2008). Measuring information systems success: Models, dimensions, measures, and interrelationships. *EJIS*, *17*, 236–263. https://doi.org/10.1057/ejis.2008.15

[28] Pitt, L., Watson, R., & Kavan, C. (1995). Service Quality: A Measure of Information Systems Effectiveness. *Management Information Systems Quarterly*, *19*(2). https://aisel.aisnet.org/misq/vol19/iss2/3

[29] Qi, Y., Sajadi, S. M., Baghaei, S., Rezaei, R., & Li, W. (2024). Digital technologies in sports: Opportunities, challenges, and strategies for safeguarding athlete wellbeing and competitive integrity in the digital era. *Technology in Society*, *77*, 102496. https://doi.org/10.1016/j.techsoc.2024.102496

[30] Rajšp, A., & Fister, I. (2020). A Systematic Literature Review of Intelligent Data Analysis Methods for Smart Sport Training. *Applied Sciences*, *10*(9), Article 9. https://doi.org/10.3390/app10093013

[31] Ranaweera, J., Weaving, D., Zanin, M., Pickard, M. C., & Roe, G. (2022). Digitally Optimizing the Information Flows Necessary to Manage Professional Athletes: A Case Study in Rugby Union. *Frontiers in Sports and Active Living*, *4*, 850885. https://doi.org/10.3389/fspor.2022.850885

[32] Regulations on the Status and Transfer of Players Incl. Interim Regulatory Framework, 102 (2025). https://inside.fifa.com/fr/legal/documents

[33] Seddon, P. B. (1997). A Respecification and Extension of the DeLone and McLean Model of IS Success. *Information Systems Research*, *8*(3), 240–253. https://doi.org/10.1287/isre.8.3.240

[34] Sheila Scraton, Kari Fasting, Freie Universitat, Germany, & Gertrud Pfisterl. (1999). IT'S STILL A MAN'S GAME?The Experiences of Top-Level European Women Footballers. *International Review for the Sociology of Sport*, *34*(2), 99–111. https://doi.org/10.1177/101269099034002001

[35] Taherdoost, H. (2016). *Sampling Methods in Research Methodology; How to Choose a Sampling Technique for Research* (SSRN Scholarly Paper No. 3205035). Social Science Research Network. https://doi.org/10.2139/ssrn.3205035

[36] Varmus, M., Kubina, M., Mičiak, M., & Šarlák, M. (2024). Integrated Sports Information Systems: Enhancing Data Processing and Information Provision for Sports in Slovakia. *Systems*, *12*(6), 198. https://doi.org/10.3390/systems12060198

[37] Venkatesh, V., Thong, J., & Xu, X. (2016). Unified Theory of Acceptance and Use of Technology: A Synthesis and the Road Ahead. *Journal of the Association for Information Systems*, *17*, 328–376. https://doi.org/10.17705/1jais.00428

[38] Wang, C., & Wang, X. (2023). Research on the Path of Embedding Digital Technology into the Integrated System of Smart Community Sports and Elderly Care Services. *Journal of Sociology and Ethnology*, *5*(8), 79–86. https://doi.org/10.23977/jsoce.2023.050814

[39] Zambom-Ferraresi, F., Rios, V., & Lera-López, F. (2018). Determinants of sport performance in European football: What can we learn from the data? *Decision Support Systems*, *114*, 18–28. https://doi.org/10.1016/j.dss.2018.08.006