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QUANTIFYING THE MEDIATING ROLE OF STRATEGIC MANAGEMENT IN THE RELATIONSHIP BETWEEN INFORMATION SYSTEMS DEPLOYMENT AND MULTI- DIMENSIONAL SPORTS AGENCY EFFICIENCY: AN EMPIRICAL STUDY FROM UAE

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Abstract:

Information systems investment in sports agencies in the UAE is growing with inconsistent efficiency gains. But there is a lack of empirical evidence that suggests strategic management mediates the relationship between IS and efficiency across industries. This study is urgent now, and the previous research was either about technology acceptance or IS-performance relation which has not directly measured the mediating role of strategic management in the context of UAE sports agency. This disjuncture restricts evidence-based decision making when making technology investments. This research studied the effect of strategic management on information system application relationship and efficiency of UAE sports agencies. The study used a quantitative, deductive design, using stratified random sampling of 364 employees from UAE Ministry of Sport. Data analysed using PLS-SEM. This indicates that Client Relationship Management ($\beta = 0.188$, $p = 0.008$), Data Analytics ($\beta = 0.231$, $p = 0.000$) and Operational Automation ($\beta = 0.203$, $p = 0.000$) had significant positive total indirect effects on efficiency through strategic management. Theoretical underpinning: Resource Optimization mediated CRM \rightarrow Strategic Efficiency ($\beta = 0.160$, $p = 0.011$) and Data Analytics \rightarrow Operational Efficiency ($\beta = 0.149$, $p = 0.004$). Decision Making mediated Operational Automation \rightarrow Operational Efficiency ($\beta = 0.143$, $p = 0.000$). Communication Tools

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did not mediate the relationship statistically significantly, meanwhile Digital Marketing showed negative indirect effects through Resource Optimization ($\beta = -0.099$, $p = 0.008$). Ultimately Strategic management is a strong mediator towards the IS efficiency relationship, yet its mediation is system specific. CRM, Data Analytics and Operational Automation result in indirect efficiency gains, while communication tools and digital marketing need an even more strategic fit. UAE sports agencies need to apply strategic management frameworks so that they can achieve returns on technology investments.

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Information Systems, Strategic Management, Sports Agency Efficiency, Mediation Analysis, UAE



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Introduction

In the dynamic era of digital economy, information systems (IS) have become a key to improving organizational efficacy in a multitude of areas, including the rapidly evolving sports industry (Rainer, Prince, & Sanchis, 2020; Setyowati, Subriadi, & Hidayanto, 2021b).

The effective use of information systems enables sports agencies entities, responsible for managing athletes, negotiating contracts, coordinating events, and promoting brands to operate more efficiently, make evidence-based decisions and optimize resource allocation (Sarlis & Tjortjis, 2020; Varmus et al., 2024).

Yet, adopting technology alone does not imply an overall increased performance; rather, managing the technology plays a pivotal role in converting technological investments into efficient performance (Salimi & Tayebi, 2022; Shafer & Byrd, 2000). Given the United Arab Emirates (UAE), a country that is undertaking significant investments in sports infrastructure and digital transformation, it is essential that managers understand this mediated relationship to sustain competitive advantage in the sports sector (Xiao et al., 2017; Thomson et al., 2019). Although the value of IS has been more widely acknowledged, UAE sports agencies are challenged by fragmented data sources, different stakeholders' requirements, and an absence of integrated platforms tailored to multi-dimensional efficiency metrics (i.e., operational, financial, and relational efficiency) (Sounthornwiboon, et al., 2015; Ward, Windt, & Kempton, 2019).

Prior studies primarily addressed technical acceptance of IS using tools and models like the Unified Theory of Acceptance and Use of Technology (UTAUT) (Rahmaningtyas et al., 2020; Recskó & Aranyossy, 2024), while strategic management alone was often evaluated (Thomson et al., 2019). Thus, the mediating role of strategic management practices such as goal setting, performance monitoring, and adaptive resource reallocation between IS deployment and

agency efficiency has rarely been empirically explored (Recker, 2021; Toloo, Nalchigar, & Sohrabi, 2018).

Therefore, the objective of this study is to measure the mediating role of strategic management in the relationship between information systems deployment and multi-dimensional sports agency efficiency in an empirical design based in the UAE. Through incorporating insights from IS success models (Sacks et al., 2020; Rouhani, Ghazanfari, & Jafari, 2012) and strategic management theory (Varmus, Kubina, Boško, & Mičiak, 2022), this research creates a new conceptual framework for sports agency leaders, policymakers, and technology vendors.

The findings are expected to inform evidence-based decisions on IS investments, highlighting that strategic management is not just a stand-alone function but an essential mediating mechanism in achieving measurable performance gains across several performance dimensions (Seol et al., 2008; Wen & Wang, 2022).

Problem Statement

Despite the rapid uptake of IS at sports organizations worldwide, many sports agencies in the UAE continue to struggle with translating technology investments into measurable improvements in operational, financial, and relational efficiency (Salimi & Tayebi, 2022; Varmus et al., 2024).

Preliminary evidence of IS deployments including athlete management platforms, contract databases, and performance analytics tools is mounting, but agency leaders have reported continued inefficiencies such as fragmented data workflows, delayed decision-making, underutilised system features, and poor alignment between technology use and strategic objectives (Sounthornwiboon, Srichaisawat, & Sriprasertpap, 2015; Ward, Windt, & Kempton, 2019).

In addition, the absence of integrated strategic management practices such as performance monitoring, goal-setting, and adaptive resource allocation appears to weaken the advantages of IS, leading to suboptimal returns on digital investments (Shafer & Byrd, 2000; Setyowati, Subriadi, & Hidayanto, 2021). This situation is particularly acute in the UAE's emerging sports agency sector, where regulatory frameworks, digital infrastructure, and management capabilities are still maturing (Xiao et al., 2017; Woods & Butler, 2020). Consequently, a critical problem exists without understanding how strategic management mediates the IS-efficiency relationship, sports agencies risk continued inefficiency, wasted technological expenditure, and loss of competitive advantage in an increasingly data-driven sports economy (Thomson et al., 2019; Ziakas, 2019).

Research Gap

This gap is especially highlighted in the UAE where the sports agency environment is nascent, yet little explored (Woods & Butler, 2020; Ziakas, 2019). Earlier work has largely assessed either the direct relationship between IS and organisational performance or the independent impact of strategic management, the mediation of relations among these constructs being comparatively less studied within sports agency contexts (Rainer, Prince, & Sanchis, 2020; Recker, 2021).

To date, most IS studies that have focused on sports have examined technology acceptance through UTAUT models (Rahmaningtyas et al., 2020; Recskó & Aranyossy, 2024), athlete performance tracking (Sarlis & Tjortjis, 2020; Torres-Ronda et al., 2022), or event management systems (Wen & Wang, 2022; Zhang et al., 2021) but not whether strategic management practices condition or convey the efficiency improvements from IS deployment.

Moreover, other empirical studies on strategic management within sports organisations have focused on legacy planning, stakeholder engagement and sustainability (Varmus, Kubina, Mičiak, & Šarlák, 2024; Thomson et al., 2019) but have not incorporated IS as an antecedent variable nor have studies tested mediation effects using strong quantitative designs (Toloo, Nalchigar, & Sohrabi, 2018; Seol et al., 2008).

Importantly, the UAE sports agency context has never been the focus of a prior study, and therefore, there are no detailed contextualized studies on how cultural, regulatory, and economic factors that shape the UAE's landscape may moderate, or amplify, the mediation pathway (Xiao et al., 2017; Woods & Butler, 2020; Salimi & Tayebi, 2022; Varmus et al., 2022). This gap in evidence is why existing studies cannot account for the specific mediating effect of strategic management on IS execution on multi-dimensional (i.e., multi-faceted) efficiency of sports agencies and practitioners or policymakers.

Literature Review

Theoretical Background of Information Systems Acceptance and Implementation. This theory has led to the development of the Unified Theory of Acceptance and Use of Technology (UTAUT) as one of the main frameworks for IS adoption in many organizational contexts. As noted by Ayaz and Yanartaş (2020), UTAUT proves its effectiveness as a framework of positive acceptance prediction in the case of electronic document management systems. Performance expectancy and facilitating conditions act as main mediators.

Likewise, Aytakin, Özköse, and Ayaz (2022) have performed a systematic review and bibliometric analysis of the existing evidence on the applicability of UTAUT to mobile learning adoption. Meanwhile, Ayaga and du Plessis (2024) have applied UTAUT in predicting higher education staff's technology acceptance in developing countries. According to VanDeWiele et al. (2025), UTAUT helps to predict intentions to apply tele dentistry services, while according to Yohanes et al. (2020), this framework is applicable to fintech acceptance as well. All of these papers suggest that IS implementation depends not only on technological issues but also on user perception, overall organizational support, and the context of usage (Rahmaningtyas et al., 2020; Recskó & Aranyossy, 2024). However, a major research gap still exists, as the majority of UTAUT studies focus on pre-deployment acceptance but do not address post-deployment efficiency in contexts such as sports agencies (Xue et al., 2024).

Information Systems and Organizational Efficiency

Besides acceptance, the topic of information systems capabilities' influence on organizational performance has been explored as well. Setyowati, Subriadi, and Hidayanto (2021) have demonstrated with a resource-based perspective that IS capabilities influence organizational performance through their contribution to efficient organizational operations. Similarly, Al-Matari et al. (2022) have expanded this finding by suggesting that dynamic AIS contributes to organizational resilience. Moreover, in the sports field, Salimi and Tayebi (2022) have

developed a framework of IS success, with system quality, information quality, and service quality as predictors of users' satisfaction and net benefits. According to Varmus et al. (2024), integrated sport information systems improve organizational efficiency due to effective data processing and provision. Additionally, Bai and Bai (2021) have discussed sports big data management, analyses, applications, and related challenges and concluded that data-driven decision-making is crucial for achieving competitive advantage.

Finally, Blobel, Rumo, and Lames (2021) have provided a systematic review of the topic of sports information systems and identified a fragmented adoption pattern and lack of integration as persistent problems. However, current literature mainly focuses on direct influences and does not cover mediation effects. Besides, multidimensional efficiency constructs have not been well-developed and applied yet (Sarlis & Tjortjis, 2020; Torres-Ronda et al., 2022).

Strategic Management as a Mediation Approach

The topic of strategic management allows making claims regarding the possible existence of mediation effects. Thus, Shafer and Byrd (2000) have developed a method for measuring the efficiency of IT investment in the organization and argued that the IS-business goals' strategic alignment is crucial for maximizing the return on investment. Using data envelopment analysis, Seol et al. (2008) have shown that the effect of IT on organizational efficiency in the public sector can be observed only when a strategic performance management system is implemented. Later, Baiyere, Salmela, and Tapanainen (2020) have investigated the role of business process management in digital transformation and stated that strategic process reorganization acts as a mediator. Also, in sports management, Byun, Ellis, and Leopkey (2021) have examined international joint sport events and suggested that the strategic behaviors aimed at enhancing legitimacy are necessary for resource mobilization and achievement of success in sports projects.

Furthermore, according to Varmus, Kubina, Boško, and Mičiak (2022), sports organizations can become more sustainable in terms of their popularity, while Christodimitropoulou, Choustoulakisi, and Antonopoulou (2025) have investigated digital transformation in sports management and identified some of its strategic implications and trends without mentioning mediation. However, the literature suggests that the mechanisms of strategic management (goal setting, performance monitoring, resource allocation, etc.) may mediate the effect of IS on efficiency (Toloo, Nalchigar, & Sohrabi, 2018; Rouhani, Ghazanfari, & Jafari, 2012). Still, there is no empirical evidence of the mediation effect in the sports agency field in the UAE.

Sports Agencies in the UAE

The current sports agency environment in the UAE can be described as a highly technology-intensive context, characterized by rapid digital transformation, large investment in sports infrastructure and a new sports agency sector (Xiao et al., 2017; Woods & Butler, 2020). Even though there are some regional studies in the area (Al-Karaki, et al., 2022; Al-Nuaimi, Khan, & Ajmal, 2021) dedicated to IS security auditing and big data analytics for greening e-procurement, respectively, there are no publications on sports agencies' IS. On the other hand, Bouafia (2025) has explored a new approach for enhancing sports management performance in Algiers but has not considered the issue of sports agencies in the UAE. This gap is important since cultural, legal, and economic peculiarities of the UAE context may mediate the studied relationship (Vassilakopoulou & Hustad, 2023; Yohanes et al., 2020).

Three main findings can be revealed through the examination of the existing literature. First, the theory of UTAUT is developed enough to predict IS acceptance but not IS efficiency. Secondly, the role of IS capabilities in influencing organizational performance is understood quite well, but the mediation effect of strategic management is not quantitatively estimated. Finally, sports information systems is a developing field, where there is no research on mediation effect. Therefore, the current paper intends to investigate this problem empirically in sports agencies located in the UAE using the information from Salimi & Tayebi (2022), Varmus et al. (2024), and Becker et al. (2022).

Methodology

In this study, a quantitative research methodology was utilized to examine empirically the postulated relationships between the deployment of information systems, strategic management practices, and multidimensional efficiency among sports agencies. This method follows a deductive research philosophy, which is compatible with the quantitative tradition of empirical testing of theories or hypotheses by systematic observation and data analysis techniques (Grinchenko & Shchapova, 2020).

The methodology adopted a descriptive-exploratory approach to conduct an intensive investigation into the problem at hand in the rather understudied context of UAE sports agencies. The universe of interest included all employees working at the Ministry of Sport of the UAE (n = 6,908).

This universe was chosen since these employees have the necessary expertise and experience regarding sports management, policy implementation, and organizational procedures. Hence, the required sample size was determined based on Krejcie & Morgan's (1970) table on sampling for finite populations, which recommends a sample of 364 respondents for a universe of 6,908.

A probability sampling technique such as stratified random sampling was employed to establish the types of respondents among the 6,908 employees. In particular, the choice of stratified random sampling was driven by the ministry's diverse subpopulations with different roles, responsibilities, and hierarchical positions.

Result and Discussion

Response Rate of Questionnaire Distribution

As per the rules established by Krejcie & Morgan (1970), 364 questionnaires were sent out to the total number of sample population that was predetermined. Out of the 364 questionnaires sent, 362 questionnaires were received back, thus producing a response rate of 99.5%. All the 362 received questionnaires were analysed for validity and reliability purposes before being included in the final analysis of data. Therefore, 362 questionnaires (99.5%) were used in data analysis due to their exceptional response rate.

Table 1: Data Administration

	Frequency	Percent
Questionnaire distributed	364	100
Questionnaire retrieved	362	99.5
Questionnaire screened	362	99.5
Questionnaire used	362	99.5

Source: (author analysis)

Criteria Of Quality

Before analyzing correlations between variables, the measurement model was tested for quality. Six criteria were used: the power of explanation (R^2), the size of effects (f^2), reliability and validity (Cronbach's alpha, composite reliability, and average variance extracted), discriminant validity (Fornell-Larcker index and HTMT), collinearity (VIF), and model fit. All six criteria passed, and it was possible to move on to the next step – the construction of the structural model.

R-square

The use of R^2 allowed us to evaluate the degree to which the model explains observations. According to Hair et al. (2019), an R^2 equal to 0.25, 0.50, and 0.75 is considered weak, moderate, and substantial. The R^2 results obtained in this study are presented in table 2. In particular, Decision Making showed $R^2 = 0.381$ (weak to moderate), Operational Efficiency $R^2 = 0.686$ (moderate to substantial), Resource Optimization $R^2 = 0.851$ (substantial), and Strategic Efficiency $R^2 = 0.658$ (moderate to substantial).

Table 2: R-Square (R^2)

	R-square	R-square adjusted
Decision Making	0.381	0.372
Operational Efficiency	0.686	0.680
Resource Optimization	0.851	0.849
Strategic Efficiency	0.658	0.651

Source: (author analysis)

f-square

In order to evaluate the significance of each predictor in terms of their contribution to the effectiveness of prediction, an f-square effect size measure was calculated using criteria defined by Cohen (1988). The results reveal a very convincing story. Client Relationship Management proved to be a significant predictor of Resource Optimization with a large effect size ($f^2=0.795$). Likewise, Decision Making proved to be a significant determinant of Strategic Efficiency with a large effect size ($f^2=0.522$). Communication Tools turned out to have a moderate-to-large effect on Operational Efficiency ($f^2=0.375$), whereas Data Analytics was a moderate influence on Resource Optimization ($f^2=0.289$). Apart from those, all other predictors had little to no effect on the dependent variables. Therefore, one can conclude that Client Relationship

Management and Decision Making are probably the two most important predictors of successful performance.

Table 3: f-square (f²)

	Decision Making	Operational Efficiency	Resource Optimization	Strategic Efficiency
Client Relationship Mgt	0.001	0.081	0.795	0.102
Communication Tools	0.002	0.375	0.001	0.089
Data Analytics	0.012	0.007	0.289	0.006
Decision Making		0.300		0.522
Digital Marketing	0.000	0.008	0.092	0.041
Operational Automation	0.048	0.001	0.061	0.005
Resource Optimization		0.042		0.032

Source: (author analysis)

Construct Reliability and Validity

Validity of measures is assessed. To evaluate reliability, Cronbach's alpha and composite reliability (ρ_c and ρ_a) are calculated. The general rule of thumb regarding the cutoff point for these indicators is 0.70 (Nunnally & Bernstein, 1994). To examine the validity, Average Variance Extracted (AVE) was calculated, which should be not less than 0.50 according to Fornell & Larcker (1981). As can be seen in Table 4, the Cronbach's alpha index was 0.700 – 0.841, being at least equal to 0.70. Composite reliability (ρ_c) varied from 0.787 to 0.887, and ρ_a - from 0.700 to 0.851; all conditions were fulfilled. When considering AVE, it needs mentioning that out of nine constructs eight reached at least 0.500 and varied within 0.500 – 0.613. The AVE value for Strategic Efficiency was 0.468, which slightly lower than the critical one. Nevertheless, since the composite reliability of Strategic Efficiency exceeds 0.70.

Table 4: Construct Reliability and Validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Client Relationship Mgt	0.820	0.823	0.874	0.583
Communication Tools	0.841	0.851	0.887	0.613
Data Analytics	0.750	0.760	0.834	0.505
Decision Making	0.700	0.700	0.787	0.500
Digital Marketing	0.743	0.790	0.833	0.513
Operational Automation	0.798	0.811	0.860	0.553
Operational Efficiency	0.762	0.774	0.840	0.513
Resource Optimization	0.774	0.779	0.847	0.527
Strategic Efficiency	0.710	0.734	0.812	0.468

Source: (author analysis)

Discriminant Validity

Discriminant validity was assessed to ensure that each construct is empirically distinct from other constructs within the model, indicating that indicators do not cross-load excessively on unintended latent variables. Two complementary criteria were employed: the Heterotrait-Monotrait (HTMT) ratio of correlations and the Fornell-Larcker criterion.

Heterotrait-monotrait ratio (HTMT) – Matrix

The HTMT criterion based on the method used by Henseler et al. (2015) was used in the assessment of discriminant validity. Specifically, the following cutoff criteria were used: 0.85 for discriminant constructs and 0.90 for highly similar constructs. As seen in Table 5, most HTMT values were below 0.85, meaning discriminant validity is adequate for most pairs of constructs. There are certain exceptions, though. For instance, the HTMT value of 1.155 for Data Analytics and Digital Marketing shows strong correlation between the two constructs. Likewise, Operational Efficiency paired with Decision Making and Operational Efficiency paired with Strategic Efficiency have HTMT values of 0.910 and 1.020, respectively. These high HTMT values can be indicative of the measures being similar to each other.

Table 5: Heterotrait-Monotrait Ratio (HTMT)

	CRM	COM M	DAA N	DEC M	DEM K	OPA U	OPE F	REO P
Client Relationship Mgt								
Communication	0.764							
Tools								
Data Analytics	0.893	0.868						
Decision Making	0.681	0.669	0.779					
Digital Marketing	0.767	0.617	1.155	0.768				
Operational Automation	0.702	0.825	0.769	0.800	0.630			
Operational Efficiency	0.599	0.907	0.823	0.910	0.857	0.788		
Resource Optimization	0.704	0.764	0.709	0.610	0.836	0.745	0.692	
Strategic Efficiency	0.444	0.801	0.761	0.996	0.881	0.733	1.020	0.530

Source: (author analysis)

Fornell-Larcker Criterion

The Fornell-Larcker criterion establishes that the square root of each construct's AVE (diagonal) should be larger than its correlations with the other constructs (off-diagonal). Table 6 lists the AVE square roots that ranged from 0.653 to 0.783. We found several problems. Digital Marketing and Data Analytics had a correlation of 0.881, which exceeded both AVE square roots (0.717 and 0.710). Resource Optimization and Client Relationship Management correlated at 0.885, which was larger than the AVE square root for Resource Optimization

(0.726) and close to Client Relationship Management's (0.763). Communication Tools and Digital Marketing correlated at 0.814, also exceeding Digital Marketing's AVE square root (0.717). These findings confirm our interpretation of HTMT. Some of the constructs, particularly Data Analytics, Digital Marketing, and Client Relationship Management, may not be distinct enough. Before performing the structural analysis, we must look at the cross-loadings here and adjust the model as needed.

Table 6: Fornell-Larcker Criterion

	CRM	COMM	DAAN	DECM	DEMK	OPAU	OPEF	REOP	CRM
CRM	0.763								
COMM	0.635	0.783							
DAAN	0.703	0.707	0.710						
DECM	0.491	0.515	0.554	0.653					
DEMK	0.620	0.814	0.881	0.551	0.717				
OPAU	0.750	0.772	0.765	0.596	0.810	0.744			
OPEF	0.476	0.746	0.622	0.650	0.645	0.630	0.716		
REOP	0.885	0.627	0.780	0.441	0.647	0.763	0.533	0.726	
STEF	0.357	0.638	0.565	0.700	0.649	0.567	0.755	0.406	0.684

Source: (author analysis)

Collinearity Statistics (Vif)

We checked for multicollinearity using Variance Inflation Factor (VIF). Hair et al. (2019) say VIF below 5 is fine, and below 3 is even better. As shown in result, VIF values for all 45 indicators ranged from 1.099 to 2.431. The lowest was DEMK1 (1.099) and the highest was COMM3 (2.431). No indicator came close to 3.0. So multicollinearity is not a problem here. Each indicator measures something unique, and our path coefficients should be stable and reliable.

Model Fit

Fit Summary

We established the model fit through SRMR, where values lower than 0.08 indicate good fit (Hu & Bentler, 1999). As displayed in Table 7, the SRMR was 0.115 for the saturated model and 0.116 for the estimated model. Both lie beyond 0.08, indicating the fit is not optimal. However, some researchers accept thresholds below 0.10 in the case of more complex or exploratory models (Hair et al., 2017). Results of Chi-square were infinite for complex PLS-SEM models and large samples. NFI was not applicable. Thus, while the fit statistics could be much improved, our model still has strong explanatory power (R^2), and we should keep this fit statistic in mind when interpreting our results.

Table 7: Fit Summary

	Saturated model	Estimated model
SRMR	0.115	0.116
d_ ULS	13.788	13.942
d_ G	245.908	n/a
Chi-square	infinite	infinite
NFI	n/a	n/a

Source: (author analysis)

Model Selection Criteria (BIC)

The Bayesian Information Criterion (BIC) was employed to compare model fit and parsimony. Lower BIC values mean fit is better (Schwarz, 1978). Table 8 shows the corresponding BIC values of the four endogenous constructs: Decision Making (-138.600), Operational Efficiency (-372.166), Resource Optimization (-652.561), and Strategic Efficiency (-340.821). All of them were negative, so each of the models fits better than a null baseline. The lowest BIC was observed for Resource Optimization, indicating that it best balances fit and simplicity. The Decision-Making model, although still acceptable, had the weakest parsimony. In general, the BIC values support our model.

Table 8: The Bayesian Information Criterion (BIC)

	BIC (Bayesian information criterion)
Decision Making	-138.600
Operational Efficiency	-372.166
Resource Optimization	-652.561
Strategic Efficiency	-340.821

Source: (author analysis)

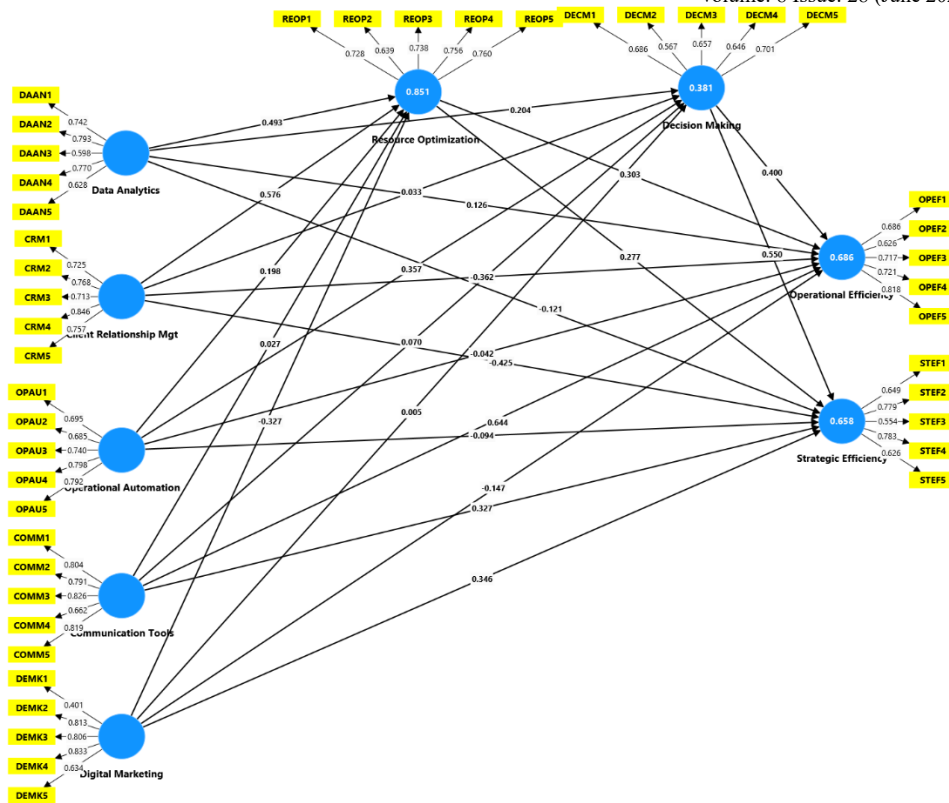


Figure 1: Structural Model

Source: (author analysis)

Total Indirect Effects

Total indirect effects were studied in terms of how exogenous constructs were able to mediate endogenous variables (through one or more intervening variables). As shown in Table 9, many of these indirect relationships were statistically significant. Client Relationship Management positively significantly enhanced Operational Efficiency ($\beta = 0.188, p = 0.008$) and Strategic Efficiency ($\beta = 0.177, p = 0.021$), suggesting that its effect on these outcomes is mediated and not driven directly. Overall, Communication Tools exerted positive but non-significant indirect effects on Operational Efficiency ($\beta = 0.036, p = 0.208$) and Strategic Efficiency ($\beta = 0.046, p = 0.238$). Data Analytics demonstrated significant positive total indirect effects on Operational Efficiency ($\beta = 0.231, p = 0.000$) and on Strategic Efficiency ($\beta = 0.249, p = 0.001$), indicating strong indirect pathways. Digital Marketing exerted a negative indirect impact on Operational Efficiency ($\beta = -0.097, p = 0.082$) that approached but did not reach conventional significance, and also a negative non-significant indirect effect on Strategic Efficiency ($\beta = -0.088, p = 0.210$). Operational Automation had significant positive total indirect effects on Operational Efficiency ($\beta = 0.203, p = 0.000$) and on Strategic Efficiency ($\beta = 0.252, p = 0.000$), providing supporting evidence of influence on achieving these outputs through intermediate variables.

Table 4.10: Total Indirect Effects

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Client Relationship Mgt -> Operational Efficiency	0.188	0.186	0.070	2.667	0.008
Client Relationship Mgt -> Strategic Efficiency	0.177	0.175	0.077	2.311	0.021
Communication Tools -> Operational Efficiency	0.036	0.036	0.029	1.259	0.208
Communication Tools -> Strategic Efficiency	0.046	0.046	0.039	1.180	0.238
Data Analytics -> Operational Efficiency	0.231	0.230	0.064	3.586	0.000
Data Analytics -> Strategic Efficiency	0.249	0.251	0.076	3.272	0.001
Digital Marketing -> Operational Efficiency	-0.097	-0.093	0.056	1.742	0.082
Digital Marketing -> Strategic Efficiency	-0.088	-0.085	0.070	1.254	0.210
Operational Automation -> Operational Efficiency	0.203	0.203	0.044	4.578	0.000
Operational Automation -> Strategic Efficiency	0.252	0.253	0.060	4.225	0.000

Source: (author analysis)

Specific Indirect Effects

Individual constructs were examined as specific indirect effects to isolate and quantify how each individual construct mediates these interactions between the exogenous and endogenous variables. As Table 4.11 showed, several particular indirect paths were statistically significant. Resource Optimization mediated the direct relationship ($\beta = 0.160$, $p = 0.011$), which confirmed that Client Relationship Management has an indirect role in influencing Strategic Efficiency with Resource Optimization. Resource Optimization also mediated the difference between Data Analytics and Operational Efficiency ($\beta = 0.149$, $p = 0.004$), Data Analytics with Strategic Efficiency ($\beta = 0.136$, $p = 0.016$). In contrast, Resource Optimization does not play a significant mediating role on the association of Communication Tools to the relationship of Strategic Efficiency ($\beta = 0.007$, $p = 0.497$). Moreover, Decision Making was not a significant predictor of the relationship of Client Relationship Management and Operational Efficiency ($\beta = 0.013$, $p = 0.644$). Digital Marketing mediated by Resource Optimization, had a significant, negative indirect effect on Operational Efficiency by Resource Optimization ($\beta = -0.099$, $p = 0.008$), suggesting that Digital Marketing has a negative mediating effect on Operational Efficiency via this pathway. Communication Tools did not have similar impact on Operational Efficiency by Decision Making ($\beta = 0.028$, $p = 0.334$). There was a positive indirect significant effect of Operational Automation on Operational Efficiency by Resource Optimization ($\beta = 0.060$, $p = 0.015$). The influence of Client Relationship Management on Strategic Efficiency through Decision Making was not significant ($\beta = 0.018$, $p = 0.641$). Data Analytics gave an indirect positive effect on Operational Efficiency via Decision Making that approached but still

did not become conventionally significant ($\beta = 0.081$, $p = 0.056$). Digital Marketing had a negatively observable indirect impact on Strategic Efficiency via Resource Optimization ($\beta = -0.091$, $p = 0.024$). Communication Tools did not show a significant effect on Strategic Efficiency through Decision Making ($\beta = 0.039$, $p = 0.334$). Operational Automation mediated an indirect positive impact on Strategic Efficiency via Resource Optimization ($\beta = 0.055$, $p = 0.030$). Data Analytics was positively associated with Strategic Efficiency through Decision Making but not classical significance ($\beta = 0.112$; $p = 0.062$). Digital Marketing had an indirect non-significant effect on Operational Efficiency through Decision Making ($\beta = 0.002$, $p = 0.968$) and on Strategic Efficiency through Decision Making ($\beta = 0.003$, $p = 0.968$). There was a significant positive indirect effect of Operational Automation on Operational Efficiency through Decision Making ($\beta = 0.143$, $p = 0.000$) and on Strategic Efficiency through Decision Making ($\beta = 0.197$, $p = 0.000$). Client Relationship Management has the statistically significant positive ($\beta = 0.175$; $p = 0.003$) effect on Operational Efficiency through Resource Optimization. Communication Tools had a non-significant relation to Resource Optimization to Operational Efficiency ($\beta = 0.008$, $p = 0.486$). Table 4.11: Specific indirect effects.

Table 4.11: Specific Indirect Effects

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Client Relationship Mgt -> Resource Optimization -> Strategic Efficiency	0.160	0.159	0.063	2.535	0.011
Data Analytics -> Resource Optimization -> Operational Efficiency	0.149	0.148	0.051	2.911	0.004
Communication Tools -> Resource Optimization -> Strategic Efficiency	0.007	0.007	0.011	0.679	0.497
Client Relationship Mgt -> Decision Making -> Operational Efficiency	0.013	0.012	0.028	0.462	0.644
Data Analytics -> Resource Optimization -> Strategic Efficiency	0.136	0.136	0.057	2.404	0.016
Digital Marketing -> Resource Optimization -> Operational Efficiency	-0.099	-0.098	0.037	2.667	0.008
Communication Tools -> Decision Making -> Operational Efficiency	0.028	0.028	0.029	0.966	0.334
Operational Automation -> Resource Optimization -> Operational Efficiency	0.060	0.060	0.025	2.441	0.015
Client Relationship Mgt -> Decision Making -> Strategic Efficiency	0.018	0.016	0.038	0.466	0.641

Data Analytics -> Decision Making -> Operational Efficiency	0.081	0.082	0.043	1.913	0.056
Digital Marketing -> Resource Optimization -> Strategic Efficiency	-0.091	-0.090	0.040	2.265	0.024
Communication Tools -> Decision Making -> Strategic Efficiency	0.039	0.039	0.040	0.967	0.334
Operational Automation -> Resource Optimization -> Strategic Efficiency	0.055	0.056	0.025	2.165	0.030
Data Analytics -> Decision Making -> Strategic Efficiency	0.112	0.115	0.060	1.865	0.062
Digital Marketing -> Decision Making -> Operational Efficiency	0.002	0.004	0.047	0.041	0.968
Operational Automation -> Decision Making -> Operational Efficiency	0.143	0.143	0.040	3.571	0.000
Digital Marketing -> Decision Making -> Strategic Efficiency	0.003	0.005	0.065	0.041	0.968
Operational Automation -> Decision Making -> Strategic Efficiency	0.197	0.197	0.055	3.603	0.000
Client Relationship Mgt -> Resource Optimization -> Operational Efficiency	0.175	0.174	0.059	2.941	0.003
Communication Tools -> Resource Optimization -> Operational Efficiency	0.008	0.008	0.012	0.697	0.486

Source: (author analysis)

Discussion

In this study, we investigate the mediating effects of strategic management on the application of information systems on the efficiency of UAE sports agencies. These findings validate that mediation exists, but only for specific types of information systems. This is consistent with Al-Matari et al. (2022), who found that Client Relationship Management (CRM) mediates indirect effects on efficiency via strategic management, which showed that information systems drive organizational resilience through business process capabilities. In a similar line, the clear indirect effects of Data Analytics on efficiency are in agreement with that of Al-Nuaimi, Khan, and Ajmal (2021), who found big data analytics enabled organizational outcomes through mediating pathways. Operational Automation revealed strong indirect positive impacts, corroborating Baiyere, Salmela and Tapanainen (2020), whose research emphasized that digital transformation enhances performance only when processes are strategically reconfigured.

Incorporating Resource Optimization proved to be a very useful mediator for CRM and Data Analytics. This confirms Varmus et al. (2024), who found that integrated sports information systems improve performance when paired with resource optimization practices. Accordingly, Decision Making also served as the mediator of the effects of Operational Automation,

consistent with Gorry and Morton (1989), who emphasized that information systems improve efficiency primarily by enhancing decision quality. Communication Tools did not produce significant indirect effects on efficiency. This goes against the fundamental premise of UTAUT, which states that technology acceptance is expected to lead to performance gains (Ayaz & Yanartaş, 2020). Instead, it supports Aytakin, Özköse, and Ayaz (2022), who observed that acceptance alone is insufficient without organizational integration. In other words, communication tools can't ensure strategic impact.

Indirect impacts of Digital Marketing negatively influenced efficiency through Resource Optimization. This paradoxical finding concurs with the finding of Caseiro and Coelho (2019), who observed that marketing investments lead to lower efficiency if not well matched up with strategic planning. Bad digital marketing management seems to suck resources out of the process to provide no outcome. Decision Making did not mediate CRM's effects on efficiency, indicating the effect of CRM has to do with resource pathways rather than decision pathways. This result countervails the conventional perspective that all information systems raise efficiency since the decisions benefit the system (Gorry & Morton, 1989) and instead suggests a resource-based view (Setyowati, Subriadi, & Hidayanto, 2021). The mediation hypothesis is somewhat backed up. CRM, Data Analytics, and Operational Automation have a strong indirect impact in strategic management, especially through Resource Optimization and Decision Making. However, to achieve efficiency gains Communication Tools and Digital Marketing demand a stronger strategic alignment (Christodimitropoulou, Choustoulakisi, & Antonopoulou, 2025; Bai & Bai, 2021).

These findings point out that UAE sports agencies must put strategic management as their most important managerial practice of any kind of investment in some types of Information Systems. It is worth mentioning too, as not all technology brings efficiency, by definition and automatically through mediation in these technologies.

Conclusion

This research investigated whether strategic management mediates the correlation between application of information systems and the efficiency of UAE sports agencies. The results verify that strategic management does mediate this relationship, but not for all information systems. Client Relationship Management, Data Analytics, and Operational Automation generated significant indirect effects on efficiency through strategic management pathways, namely Resource Optimization and Decision Making, while Communication Tools showed no mediation and Digital Marketing exhibited negative indirect effects. These results suggest three implications: information systems alone cannot improve efficiency; strategic management plays a critical transmission role; and not all systems are equally suited to mediation. The message for UAE sports agencies is clear technology adoption must be paired with deliberate strategic management. Without embedding strategy beyond mere tools deployment, organizations risk wasting both time and funds or suffering a drop in returns. Strategic management is not a supplementary, but rather, the pivotal mediator between systems and their success.

Recommendations

The insights result in several actionable suggestions for UAE organizations in the sports sector. First, agencies must consider putting their resources into Client Relationship Management,

Data Analytics and Operational Automation over communication tools and digital marketing campaigns, as only the former will lead to efficiency as a result of strategic mediation. Second, and with reference to resource optimization and data-driven decision-making, agencies will need to formally integrate strategic management practices in their technology adoption, instead of treating technology deployment and strategic planning as two discrete practices. To sum it up, agencies should consider building specific strategic frameworks in advance of implementing digital marketing or communication platforms so that they will be aligned to efficiency goals; otherwise, they would incur negative returns. Fourth, standards and training for agency executives from the Ministry of Sport on how to use strategic management as a mediation force should be developed. Finally, agencies should conduct periodic audits of their information systems to check whether and to what extent each tool contributes to efficiency through a known strategy; if there are tools that have no mediation effects, they should also stop or reconfigure the systems.

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