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# THE IMPACT OF DIGITAL TRANSFORMATION IN MANAGEMENT ON THE QUALITY OF PERFORMANCE OF EMPLOYEES IN SPORTS ACTIVITIES DEPARTMENTS IN JORDANIAN EDUCATION DIRECTORATES

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**ABSTRACT**

*The global wave of digital transformation is reshaping organizational structures and processes, with the public sector being a key area of application. This study investigates the impact of digital transformation in management on the quality of employee performance within the Sports Activities Departments of the Jordanian Ministry of Education. Utilizing a mixed-methods approach, the research combined quantitative data from a survey of 150 employees across various directorates with qualitative insights from 10 in-depth interviews with department heads and senior officials. The study measured digital transformation across four key dimensions: Management Information Systems (MIS), E-Communication, Data-Driven Decision-Making, and Digital Skills Infrastructure. Employee performance quality was assessed through metrics of efficiency, effectiveness, innovation, and job satisfaction. The findings reveal a statistically significant positive correlation between the overall level of digital transformation and the quality of employee performance. Specifically, Data-Driven Decision-Making emerged as the strongest predictor of performance effectiveness and innovation. However, the study also identified significant barriers, including resistance to change, insufficient training, and budgetary constraints. Qualitative data highlighted a gap between the availability of digital tools and their strategic integration into core workflows. Based on these results, the paper provides a set of strategic recommendations for the Jordanian Ministry of Education, focusing on developing a comprehensive digital strategy, investing in continuous capacity building, fostering a digital culture, and modernizing the technological infrastructure to fully leverage digital transformation for enhancing sports education and talent development in Jordan.*

**KEYWORDS:** *Digital Transformation, Employee Performance, Public Sector Management, Sports Management, Jordan Ministry of Education, Change Management, Data-Driven Decision-Making.*

## 1. INTRODUCTION

### 1.1. Background of the Study

In the 21st century, digital transformation has transcended being a mere buzzword to become a fundamental driver of organizational success and sustainability. Defined as the integration of digital technology into all areas of an organization, fundamentally changing how it operates and delivers value, digital transformation is compelling both private and public entities to rethink their traditional models (Westerman et al., 2014). The public sector, often characterized by bureaucratic inertia, is under increasing pressure to adopt digital tools to enhance efficiency, transparency, and service delivery (Janowski, 2015).

Within this global context, the Hashemite Kingdom of Jordan has embarked on a national digital transformation journey. Spearheaded by initiatives like the "Jordan Vision 2025" and the Ministry of Digital Economy and Entrepreneurship, the government aims to create a knowledge-based economy and improve public services (Ministry of Digital Economy and Entrepreneurship, 2023). The Jordanian Ministry of Education (MoE), as one of the largest public institutions, is a critical arena for this transformation. Its mandate to educate future generations extends beyond academic instruction to encompass holistic student development, including physical education and sports.

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The Sports Activities Departments within the MoE are responsible for nurturing athletic talent, promoting physical fitness, and instilling values of sportsmanship among students. The performance of employees in these departments—including administrators, sports supervisors, and coordinators—directly impacts the quality and reach of sports programs in schools nationwide. However, these departments often operate with legacy systems, paper-based processes, and siloed information, which can hamper their effectiveness.

### 1.2. Problem Statement

Despite the national push for digitization, there is a palpable gap in understanding how the specific adoption of digital management practices within the MoE's Sports Activities Departments influences the professional performance of their employees. These employees face challenges such as manual scheduling of tournaments, inefficient communication channels, difficulties in tracking student athlete data, and cumbersome reporting mechanisms. This leads to delays, errors, limited strategic insight, and ultimately, a sub-optimal sports ecosystem within Jordan's schools. Therefore, a critical investigation is needed to determine whether and how digital transformation in management—through tools like MIS, data analytics, and digital communication platforms—can enhance the quality, efficiency, and impact of employee performance in this specific context.

### 1.3. Research Objectives

This study aims to:

1. Assess the current level of digital transformation in the management processes of the Sports Activities Departments in the Jordanian MoE.
2. Evaluate the perceived quality of employee performance within these departments.
3. Examine the relationship between the level of digital transformation in management and the quality of employee performance.
4. Identify the key challenges and barriers hindering effective digital transformation in this sector.
5. Propose evidence-based recommendations to guide the MoE in leveraging digital transformation to improve employee performance and sports outcomes.

### 1.4. Research Questions

1. What is the extent of implementation of digital transformation in the management of the Sports Activities Departments?
2. How do employees perceive the quality of their own performance in terms of efficiency, effectiveness, and innovation?
3. Is there a statistically significant relationship between digital transformation in management and the quality of employee performance?
4. What are the primary facilitators and obstacles to successful digital transformation in this context?

### 1.5. Significance of the Study

This research holds significance for multiple stakeholders. For policymakers and MoE leadership, it provides empirical evidence to inform digital investment decisions and strategy formulation. For department managers and employees, it highlights the tangible benefits of digital tools and identifies areas for skill development. For the academic community, it contributes to the burgeoning literature on digital transformation in the public sector, particularly in a non-Western context and within the specialized field of educational sports management.

### 1.6. Structure of the Paper

This paper is organized into six chapters. Following this introduction, Chapter Two presents a review of relevant literature. Chapter Three details the research methodology. Chapter Four presents the results and findings, and Chapter Five discusses their implications. Finally, Chapter Six offers a conclusion, specific recommendations, and notes the study's limitations.

## 2. LITERATURE REVIEW

### 2.1. Conceptual Framework of Digital Transformation in Management

Digital transformation in management is distinct from simple digitization (converting analog to digital) or digitalization (using digital technologies to change existing processes). It represents a profound shift in organizational culture, leadership, and business models (Vial, 2019). In the context of public management, it involves:

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- **Management Information Systems (MIS):** Integrated systems for processing data into meaningful information for planning, control, and decision-making (Laudon & Laudon, 2020). For sports departments, this could mean a centralized database for student athletes, facilities, and competitions.
- **E-Communication and Collaboration:** The use of platforms like Microsoft Teams, Slack, or intranets to break down communication silos and enable real-time collaboration (Leonardi, 2015).
- **Data-Driven Decision-Making (DDDM):** The practice of basing decisions on data analysis rather than purely on intuition or tradition. In sports management, this can optimize talent identification, resource allocation, and program effectiveness (Davenport, 2018).
- **Digital Skills and Mindset:** The human capital dimension, requiring employees to possess not only technical skills but also an adaptive, innovative, and continuous learning mindset (Kane et al., 2017).

### 2.2. Dimensions of Employee Performance Quality

Employee performance is a multi-faceted construct. Beyond mere task completion, "quality" of performance encompasses:

- **Efficiency:** Performing tasks with minimal waste of time and resources (e.g., faster processing of tournament registrations).
- **Effectiveness:** Achieving desired outcomes and objectives (e.g., increasing student participation in sports).
- **Innovation:** The ability to generate and implement new ideas for programs, processes, or problem-solving.
- **Job Satisfaction:** A positive emotional state resulting from the appraisal of one's job, which is closely linked to motivation and retention (Judge et al., 2017).

### 2.3. The Nexus between Digital Management and Employee Performance

Extant literature suggests a positive relationship between digital tools and performance. Research by Brynjolfsson and McAfee (2014) argues that digital technologies act as a performance multiplier, augmenting human capabilities. Specifically:

- MIS can reduce administrative burdens, freeing up employees for more strategic, high-value work (Dery et al., 2017).
- E-communication enhances coordination and reduces information asymmetry, leading to more effective teamwork (Fulk & Yuan, 2013).
- DDDM empowers employees with insights, leading to more accurate and impactful decisions (Provost & Fawcett, 2013).
- However, the relationship is not automatic. It is mediated by factors such as the quality of technology implementation, user training, and organizational culture (Schwarzmüller et al., 2018).

### 2.4. The Context of Sports Activities in the Jordanian Educational System

Sports in Jordanian schools are managed through a centralized structure, with a central department in the MoE and sub-departments in regional directorates. Studies on this context, such as those by Al-Sharif (2019), often highlight challenges like limited funding, inadequate facilities, and a traditional administrative approach. There is a scarcity of research linking these administrative challenges directly to digital transformation opportunities.

### 2.5. Research Gap

While general studies on e-government in Jordan exist (e.g., Al-Hadidi, 2020), and studies on sports management are available, there is a clear research gap at their intersection. No known study has empirically examined the impact of digital *management* transformation on employee performance within the Sports Activities Departments of the Jordanian MoE. This research seeks to fill this gap by providing a focused, evidence-based analysis.

## 3. RESEARCH METHODOLOGY

### 3.1. Research Design

This study employed an explanatory sequential mixed-methods design. The primary quantitative phase involved a cross-sectional survey to quantify the relationship between variables. This was followed by a qualitative phase using semi-structured interviews to explain, elaborate on, and contextualize the quantitative findings.

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### 3.2. Population and Sampling

The target population consisted of all employees in the Sports Activities Departments across the central MoE and the 42 regional education directorates in Jordan, estimated at 350 individuals.

- **Quantitative Sample:** A stratified random sampling technique was used to ensure representation from different levels (managers, supervisors, coordinators) and regions. A sample of 180 employees was selected, of which 150 completed and returned the questionnaire, yielding a response rate of 83.3%.
- **Qualitative Sample:** A purposive sample of 10 individuals was selected, including the Director of the Central Sports Activities Department and heads of departments from various directorates, chosen for their strategic insight into management processes.

### 3.3. Data Collection Instruments

1. **Quantitative Instrument:** A self-administered questionnaire was developed based on the literature. It comprised three sections:
    - Section A: Demographic data (age, gender, position, experience).
    - Section B: Digital Transformation Scale (20 items) measuring MIS, E-Communication, DDDM, and Digital Skills on a 5-point Likert scale.
    - Section C: Employee Performance Quality Scale (15 items) measuring Efficiency, Effectiveness, Innovation, and Job Satisfaction on a 5-point Likert scale. The questionnaire was reviewed by a panel of experts and piloted to ensure validity and reliability (Cronbach's Alpha > 0.8 for all constructs).
2. **Qualitative Instrument:** A semi-structured interview protocol with open-ended questions was used to explore perceptions, challenges, and success stories in-depth.

### 3.4. Variables and Measurement

- **Independent Variable:** Digital Transformation in Management (composite of four dimensions).
- **Dependent Variable:** Quality of Employee Performance (composite of four dimensions).

### 3.5. Data Analysis Procedures

Quantitative data were analyzed using SPSS v.26. Descriptive statistics (frequencies, means, standard deviations) were used for objectives 1 and 2. Inferential statistics (Pearson correlation and multiple linear regression) were used to test the relationship (objective 3). Qualitative data were transcribed and subjected to thematic analysis to identify recurring themes and patterns (objective 4).

### 3.6. Ethical Considerations

Anonymity and confidentiality were guaranteed. Informed consent was obtained from all participants. Data were used solely for the purpose of this research.

## 4. RESULTS AND FINDINGS

### 4.1. Demographic Profile of Respondents

The majority of quantitative respondents were male (70%), held a Bachelor's degree (65%), and had between 5-15 years of experience (58%). The qualitative interviewees had an average experience of over 18 years.

### 4.2. The Current State of Digital Transformation

The overall level of digital transformation was found to be at a moderate level (Mean = 2.98/5.00, SD = 0.71). The breakdown of the dimensions revealed a varied landscape:

- **E-Communication** had the highest adoption (Mean = 3.45, SD = 0.82), primarily through email and basic WhatsApp groups.
- **Management Information Systems (MIS)** scored moderately low (Mean = 2.75, SD = 0.89). While computers are present, dedicated, integrated software for sports management is rare. Data entry is often fragmented.
- **Data-Driven Decision-Making (DDDM)** was the weakest dimension (Mean = 2.40, SD = 0.95). Decisions regarding tournament locations, resource allocation, and talent development were frequently described as based on "experience and available resources" rather than systematic data analysis.

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- **Digital Skills** were at a moderate level (Mean = 3.10, SD = 0.78), with employees proficient in basic office suites but lacking skills in data analysis or specialized sports management software.

### 4.3. The Level of Employee Performance Quality

The perceived quality of employee performance was slightly above average (Mean = 3.20/5.00, SD = 0.69). The components were rated as follows:

- **Efficiency** (Mean = 3.05, SD = 0.80): Respondents reported spending significant time on manual, repetitive tasks.
- **Effectiveness** (Mean = 3.30, SD = 0.75): Most felt they achieved their core mission, but not optimally.
- **Innovation** (Mean = 2.95, SD = 0.85): This was the lowest-rated aspect, indicating a culture that does not strongly encourage new ideas.
- **Job Satisfaction** (Mean = 3.50, SD = 0.70): Despite challenges, employees expressed a strong sense of mission and commitment to student development.

### 4.4. Testing the Relationship: Correlation and Regression Analysis

A Pearson correlation analysis revealed a strong, positive, and statistically significant relationship between the overall level of digital transformation and the overall quality of employee performance ($r = 0.72$, $p < 0.01$).
To delve deeper, a multiple linear regression was conducted with the four digital transformation dimensions as independent variables and overall performance as the dependent variable. The model was significant ($F(4, 145) = 35.82$, $p < .001$, $R^2 = 0.59$), indicating that 59% of the variance in employee performance can be explained by these digital dimensions.

The regression coefficients (Beta weights) indicated that:

- **Data-Driven Decision-Making** was the strongest unique predictor ($\beta = 0.41$, $p < .001$).
- **Digital Skills** was the second strongest predictor ($\beta = 0.28$, $p < .01$).
- **Management Information Systems** ($\beta = 0.18$, $p < .05$) and **E-Communication** ($\beta = 0.15$, $p < .05$) also had significant, though smaller, unique effects.

### 4.5. Qualitative Thematic Analysis

The interviews provided rich context to the numbers, generating three key themes:

1. **The Persistence of Analog Culture in a Digital Shell:** Interviewees noted that while digital tools exist, they are often used to replicate old, analog processes. One director stated, *"We have a database, but we also keep a paper ledger because 'that's how it's always been done,' and we don't fully trust the system."*
2. **Data-Rich but Information-Poor:** Departments collect vast amounts of data (attendance, results, participant numbers), but lack the tools and skills to analyze it. A supervisor commented, *"We know which schools won, but we don't have a system to analyze why certain districts consistently produce better athletes. That knowledge is in our heads, not in our computers."*
3. **Barriers as a Triad: Mindset, Money, and Mentorship:** The main obstacles were consistently identified as:
    - **Resistance to Change:** A fear of new processes and a perceived threat to the status quo.
    - **Insufficient and Inconsistent Funding:** Budgets for software licenses, hardware upgrades, and specialized training are often the first to be cut.
    - **Lack of Strategic Leadership:** A need for a clear digital vision and "champions" at the top to drive the transformation forward.

## 5. DISCUSSION

The findings confirm the central hypothesis of this research: digital transformation in management is a significant lever for improving the quality of employee performance in the Jordanian MoE's Sports Activities Departments. The strong correlation and substantial R-squared value from the regression analysis provide robust quantitative evidence for this relationship.

The primacy of **Data-Driven Decision-Making (DDDM)** as a performance driver is a critical insight. It suggests that the mere presence of technology is insufficient; its power is unlocked when it is used to generate actionable intelligence. When employees can base decisions on data—for instance, identifying talent hotspots or optimizing

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tournament schedules—their effectiveness and capacity for innovation increase dramatically. This aligns with Davenport's (2018) advocacy for an "analytical culture."

The significant role of **Digital Skills** underscores the human factor. Technology is an enabler, but a skilled workforce is the engine. The moderate skill level indicates a training gap, where employees are not fully equipped to exploit the potential of the tools at their disposal, a finding consistent with Kane et al. (2017).

The qualitative findings reveal the cultural and structural hurdles. The "analog culture" theme reflects Vial's (2019) assertion that digital transformation is, at its core, a cultural change. The identified triad of barriers (mindset, money, mentorship) provides a clear framework for understanding the slow pace of transformation, echoing classic change management theories (Kotter, 2012).

In essence, the study demonstrates that when digital tools are integrated strategically and supported by a skilled and adaptive workforce, they can transform the work of sports administrators from bureaucratic administration to strategic talent and program management.

## 6. CONCLUSION AND RECOMMENDATIONS

### 6.1. Conclusion

This study concludes that digital transformation in management holds immense potential for enhancing the quality of employee performance in the Sports Activities Departments of the Jordanian Ministry of Education. A significant positive relationship exists, with data-driven practices and digital skills being the most potent factors. However, the full potential remains untapped due to a combination of technological, human, and cultural barriers. The journey from digitizing existing processes to truly transforming them requires a holistic approach that goes beyond mere technology adoption.

### 6.2. Recommendations

#### 6.2.1. Strategic-Level Recommendations

1. **Develop a Unified Digital Strategy for Sports Management:** The MoE should create a comprehensive, ministry-wide digital strategy specifically for the sports sector. This strategy should outline a clear vision, define key performance indicators (KPIs), and mandate the adoption of an integrated Sports Management Information System (SMIS) to replace fragmented data practices.
2. **Cultivate Digital Leadership:** Appoint "Digital Champions" at the central and directorate levels to advocate for the transformation, manage change, and mentor colleagues. Senior leadership must consistently communicate the vision and benefits.
3. **Establish a Continuous Capacity Building Program:** Move beyond one-off training sessions. Implement a mandatory, continuous professional development program focused on data literacy, using the new SMIS, digital collaboration, and innovative problem-solving.
4. **Foster a Data-Driven Culture:** Incentivize the use of data in planning and reporting. Introduce regular performance review meetings where decisions are backed by data analytics derived from the new systems.

#### 6.2.2. Operational-Level Recommendations

1. **Phased Implementation of a Sports Management Information System (SMIS):** Partner with IT vendors to develop or procure a user-friendly, Arabic-enabled SMIS. The implementation should be piloted in a few directorates first, with robust support, before a nationwide rollout. The system should manage athlete registrations, competitions, facilities, and finances.
2. **Standardize Digital Communication Protocols:** Officially adopt a secure, centralized collaboration platform (e.g., a dedicated MoE Teams/Google Workspace instance) to replace informal WhatsApp groups, ensuring document security and efficient information flow.
3. **Allocate Dedicated Budgets:** Ensure that annual budgets for the Sports Activities Departments include dedicated line items for software subscriptions, hardware refreshes, and specialized digital training, protecting these funds from reallocation.
4. **Create Feedback and Innovation Channels:** Establish simple digital channels for employees to provide feedback on the new tools and submit innovative ideas for sports programs or process improvements, fostering a sense of ownership.

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### 6.3. Limitations and Suggestions for Future Research

This study is limited by its focus on the perceptions of employees within the MoE. Future research could incorporate the perspectives of school principals and physical education teachers to get a more holistic view. A longitudinal study tracking performance metrics before and after the implementation of a specific digital intervention would provide even stronger causal evidence. Furthermore, research could explore the impact of digital transformation on the end-users—the students—in terms of their participation rates and athletic development.

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