

Management Information Systems and Organizational Excellence: Evidence from the Social Fund for Development in Yemen

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Abstract:

This study examined the relationship between management information systems (MIS) and organizational excellence at the Social Fund for Development (SFD) in Yemen. MIS was assessed through four dimensions: hardware and communication networks, software, databases, and MIS-related human resources. The study also evaluated the levels of MIS use and organizational excellence within the institution. A cross-sectional descriptive-analytical design was employed. Data were collected through a questionnaire administered to a disproportionate stratified sample of 232 employees drawn from a population of 580. All distributed questionnaires were returned and retained for analysis, yielding a valid response rate of 100%. Sampling weights were applied to adjust for the disproportionate allocation across occupational strata, and the data were analyzed using IBM SPSS Statistics, version 27. The findings indicated a positive and statistically significant association between MIS and organizational excellence ($R = .570$, $R^2 = .325$, $p < .001$). MIS use was rated high, whereas organizational excellence was rated moderate. These findings indicate that stronger MIS capabilities are associated with higher levels of organizational excellence, although the cross-sectional design does not establish causality. The study recommends regularly evaluating and updating information systems, strengthening employee capabilities, supporting research and development initiatives, and involving innovative and high-performing employees in decision-making.

Keywords: management information systems; organizational excellence; Social Fund for Development; Yemen.

Introduction

Organizations increasingly seek fundamental changes that modernize their information infrastructure and administrative processes. These changes facilitate decision-making and help organizations respond to shifts in their operating environments. They also support sound decisions, strengthen the achievement of strategic objectives, and advance organizational excellence.

Amid rapid change and continuous development, organizational excellence has become a central objective for institutions seeking to compete globally. The need to adopt organizational excellence management has intensified in response to the knowledge and information revolution, the digital divide, globalization, and their wide-ranging implications. These forces have transformed work practices and the composition of the workforce across institutions. They have also generated multiple managerial approaches that organizations can use to improve productivity and achieve organizational excellence (Al-Miligy, 2012, p. 5).

Idris and Al-Ghalbi (2009, p. 37) identified management information systems as an important driver of performance improvement and development in many institutions and organizations. Performance is a core organizational concept and a cross-cutting concern across the fields of management. It is also one of the most consequential dimensions of organizational viability. Organizations therefore seek to improve their performance and attain the desired level of organizational excellence.

The need to keep pace with rapid developments and differentiate themselves from comparable institutions has prompted organizations to seek modern approaches to excellence. They aim to deliver their services to the highest possible standard and to sustain excellence in line with continuing technological advances (Al-Akhdar, 2019). In this context, Tom Peters argued that organizations are not inherently excellent; rather, they continually strive for organizational excellence by improving their services to survive and grow (Bashiwa et al., 2013, p. 35). Management information systems support this effort by modernizing work systems and enabling effective institutional practices. They also create an organizational environment in which information can be accessed, shared, and transmitted rapidly, accurately, and at lower cost.

The Social Fund for Development (SFD) in Yemen is an independent public institution that has gained the support and confidence of donors. It was established under Law No. 10 of 1997 to contribute to the implementation of the government's social and economic development plan. The SFD empowers individuals, families, small enterprises, poor communities, and low-income groups to engage in productive activities. It provides services, facilities, and concessional loans for service-oriented and productive projects, thereby contributing to reductions in unemployment and poverty. The SFD pursues its

objectives through programs in education, water and the environment, agriculture, health, cultural heritage, small and microenterprise development, rural roads, cash-for-work initiatives, training, and institutional support.

The SFD Monitoring and Evaluation Unit's second quarterly monitoring report (2022, p. 125), based on a sample of implemented projects, identified shortcomings and delays in completing some projects against their approved plans. These delays affected the timely handover of projects to communities in need of services. The report recommended that the SFD place greater emphasis on developing and updating the user interfaces of its management information systems. It also called for the institution to keep pace with advances in information technology to improve performance, achieve its objectives, and attain excellence.

Against this background, the study addresses an important theoretical and contextual gap. Previous research has largely examined management information systems and organizational excellence in commercial organizations operating under relatively stable conditions. Limited evidence is available from donor-supported development institutions operating in fragile and conflict-affected settings. These institutions face substantial information-processing demands arising from geographically dispersed operations, changing community needs, donor requirements, funding uncertainty, and project-based employment arrangements.

This study contributes to the literature by examining MIS capabilities in a donor-supported development institution operating in a fragile and conflict-affected context. It also identifies a capability–outcome gap: MIS use was rated high, whereas organizational excellence remained moderate. This gap suggests that technological resources may not generate their full organizational value without complementary human, leadership, and process capabilities. The study therefore moves beyond geographic novelty by offering a context-sensitive explanation of how MIS resources relate to organizational excellence in development institutions.

Accordingly, the study addresses the following main research question:

To what extent are management information systems associated with organizational excellence at the Social Fund for Development in Yemen?

The following subquestions derive from the main research question:

1. What is the current level of management information systems use at the Social Fund for Development in Yemen?
2. What is the level of organizational excellence at the Social Fund for Development in Yemen?

Study Objectives

The study examines the relationship between management information systems and organizational excellence at the Social Fund for Development in Yemen. It also assesses the levels of MIS use and organizational excellence within the institution. Specifically, the study pursues the following objectives:

1. To assess the level of management information systems use at the Social Fund for Development in Yemen.
2. To assess the level of organizational excellence at the Social Fund for Development in Yemen.
3. To examine the relationship between management information systems and organizational excellence at the Social Fund for Development in Yemen.

Study Hypotheses

The following hypotheses were formulated to achieve the study objectives:

Main Hypothesis (H1)

The resource-based view indicates that organizational value results from the effective integration of technological and human resources. Dynamic capabilities theory suggests that these integrated resources strengthen institutional adaptation and responsiveness. Organizational information processing theory further indicates that MIS improves the organization's ability to manage information uncertainty, coordinate activities, and support decision-making. Therefore, stronger MIS capabilities are expected to be associated with higher levels of organizational excellence.

- H1: Management information systems are positively and significantly associated with organizational excellence at the Social Fund for Development in Yemen.

The following sub-hypotheses derive from the main hypothesis:

Hardware and communication networks provide the technological infrastructure required to access, process, and exchange information across organizational units. From a resource-based perspective, this infrastructure becomes valuable when it supports integrated and reliable institutional processes. Organizational information processing theory also suggests that network connectivity increases information-processing capacity and reduces coordination delays. At the SFD, reliable hardware and communication networks can facilitate information exchange between headquarters, branches, and external stakeholders. Accordingly:

- H1a: Hardware and communication networks are positively and significantly associated with organizational excellence at the Social Fund for Development in Yemen.

Software converts technological infrastructure into functional organizational capabilities by supporting data processing, workflow automation, reporting, and decision-making. Dynamic capabilities theory suggests that flexible and integrated software enables organizations to adjust their processes in response to changing operational requirements. Software may therefore strengthen process efficiency, service consistency, and organizational responsiveness at the SFD. Accordingly:

- H1b: Software is positively and significantly associated with organizational excellence at the Social Fund for Development in Yemen.

Databases provide an organized institutional repository that supports the storage, retrieval, and analysis of information. According to organizational information processing theory, accessible and reliable data reduce uncertainty and improve the quality and timeliness of managerial decisions. In the SFD context, integrated databases can support project planning, monitoring, resource allocation, and reporting to stakeholders. Accordingly:

- H1c: Databases are positively and significantly associated with organizational excellence at the Social Fund for Development in Yemen.

MIS-related human resources provide the technical expertise required to operate, maintain, interpret, and improve information systems. The resource-based view emphasizes that technological resources generate value only when they are combined with appropriate human knowledge and organizational routines. Skilled employees can transform data into actionable information, adapt systems to institutional needs, and support users across organizational units. Accordingly:

- H1d: MIS-related human resources are positively and significantly associated with organizational excellence at the Social Fund for Development in Yemen.

Conceptual Model

The dimensions of the independent variable, management information systems, were identified from prior studies, including Al-Safaan and Goail (2026), Ali and Sattar (2025), Al-Hammadi et al. (2023), Awad (2021), Rizk (2020), and Abkar (2018). The dimensions of the dependent variable, organizational excellence, were derived from March et al. (2025), Al-Mahbashi (2024), Al-Aghbari (2024), Al-Alawi (2020), Awad (2021), El-Ramlawy (2021), and Al-Hassan (2020). Based on this literature, the authors developed the study's conceptual model, including its variables and dimensions, as presented below:

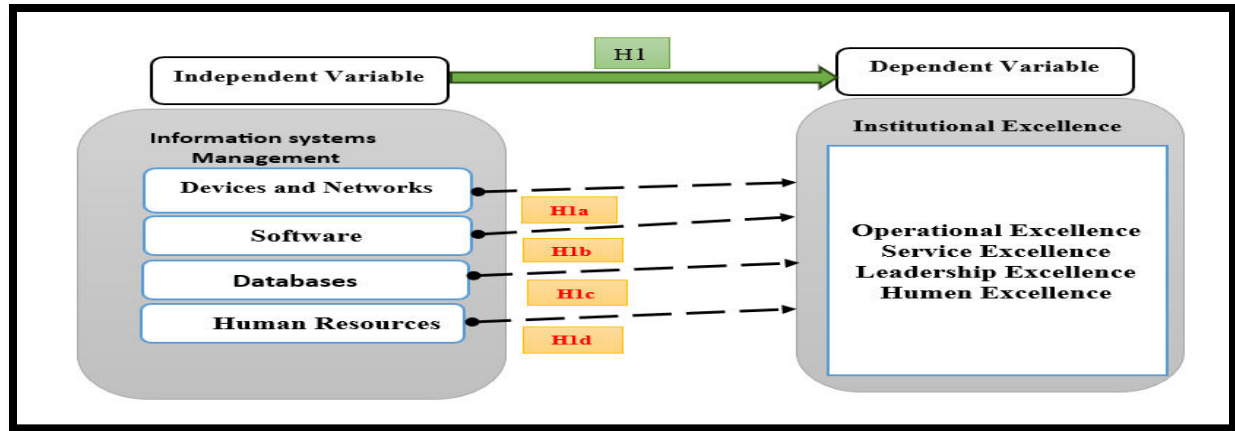


Figure 1. Conceptual Model of the Study.

The conceptual model is grounded in the resource-based view, dynamic capabilities theory, and organizational information processing theory. The model proposes that hardware and communication networks, software, databases, and MIS-related human resources represent complementary organizational resources. Their integration strengthens information-processing capacity, institutional responsiveness, coordination, and decision-making, which are expected to be positively associated with organizational excellence.

Theoretical Framework

Management Information Systems

Information systems are now a fundamental organizational resource. They contribute to institutional success and development by converting inputs into accurate outputs, improving performance, accelerating task completion, and supporting organizational continuity and growth. Their primary purpose is to develop and apply information technologies to plan and organize activities and achieve strategic objectives (Al-Manaseer et al., 2019).

Lahue (2014, p. 27) defined a management information system as a set of interrelated components, hardware and communication networks, software, databases, and human resources, that collect and process data and provide management with information for decision-making. In the present study, the human resource component is specifically described as MIS-related human resources. Turban et al. (2013, p. 44) described it as a technological infrastructure comprising hardware, networks, software, and databases. These resources are integrated, and the system cannot operate effectively without them. In the present study, management information systems refer to the computer hardware, communication networks, software, databases, and MIS-related human resources used by the SFD to collect, process, organize, store,

and exchange data and information across its departments, branches, and relevant stakeholder groups.

1. Hardware and Communication Networks

Hardware comprises the tangible components of a computer system, including different types of computers that perform multiple functions and facilitate organizational work (Qandalji & Al-Samarrai, 2009, p. 154). In this study, hardware refers to computers and their physical peripherals, including monitors, keyboards, mice, and printers.

Stair and Reynolds (2012, p. 12) defined a network as the connection of computers and equipment within a building, across a country, or worldwide to enable electronic communication. In this study, communication networks refer to the SFD's network infrastructure. This infrastructure connects computers at headquarters with those at the branches. It also supports information exchange with external parties, including commercial banks, funders, donors, and other stakeholders.

2. Software

Al-Fadl et al. (2024, p. 11) defined software as the intangible component of a computer system. It consists of instructions represented by electronic signals and magnetic states that a computer converts into visual or audio data that users can understand and use. Software comprises two main categories: operating systems and application software.

In this study, software refers to the intangible instructions and commands that enable computers to perform required tasks. These tasks include entering, processing, documenting, recording, and displaying data as information and reports that support and improve the SFD's operations.

3. Databases

A database is an organized collection of information or data stored in a computer system and typically controlled by a database management system (Garash, 2021, p. 77). In this study, databases refer to integrated and interrelated datasets stored on the SFD's computer systems. The data are collected from internal sources, including units and branches, through management information systems. They are also obtained from relevant public institutions, such as the Central Statistical Organization, the Ministry of Education and Scientific Research, and the Ministry of Health and Environment. The SFD analyzes these data to support the achievement of its institutional objectives.

4. MIS-Related Human Resources

People are among the most important requirements for operating management information systems. They include end users and technical specialists responsible for system operation (Yahiaoui, 2017, p. 12). Operationally, MIS-related human resources refer to the capabilities required to manage, operate,

and use MIS hardware, equipment, communication networks, software, and databases. They include the skills of SFD information systems specialists, system operators, and end users.

Organizational Excellence

Organizational excellence is a major topic in management research. It has become a strategic priority for organizations, institutions, and government ministries, regardless of their field of operation, because it strengthens their ability to respond to increasing competition. Excellence is therefore a central organizational objective.

Al-Barari (2012, p. 36) viewed excellence as a comprehensive and integrated concept that reflects the maturity and development of managerial thinking. Hassan (2009, p. 10) argued that the central premise of excellence theory is an institution's ability to use its capabilities and resources effectively. This ability has become particularly important in the information and technology era, which offers substantial opportunities to achieve organizational excellence and manage performance more effectively. Musa and Tulay (2008, p. 31) defined organizational excellence as the use of critical opportunities supported by effective strategic planning and commitment to a shared vision, clear objectives, adequate resources, and a strong focus on performance. Sharma and Kodali (2008, p. 50) characterized organizational excellence as a continuous, dynamic, and interactive process through which an organization creates distinctive added value and competitive advantage for its stakeholders. It does so by continuously improving its processes and developing and supporting its human resources in ways that align and integrate its activities with its strategic objectives.

Measuring organizational excellence requires the identification of its principal dimensions. A review of the literature revealed considerable variation in the dimensions used for this purpose. The present study adopts the following dimensions.

1. Operational Excellence

Process management has been defined in various ways and is widely recognized as a core principle of quality management. Despite differences in wording, the definitions convey a common meaning. Al-Selmi (2012, p. 36) explained that this dimension concerns how organizational processes are designed, managed, and improved to support strategy, create value and benefits for customers and other stakeholders, and meet their needs. El-Dajani (2013) described operational excellence as an approach rooted in senior management's creative thinking and willingness to introduce fundamental changes or tangible improvements that enhance beneficiary satisfaction.

In this study, operational excellence refers to managing and strengthening relationships with organizational stakeholders by designing, developing, and

improving processes in innovative ways that respond to their needs and expectations.

2. Service Excellence

Service excellence encompasses the critical internal activities through which an institution differentiates itself from other institutions by meeting beneficiaries' needs, expectations, and aspirations and securing their satisfaction (Idris & Al-Ghalbi, 2009, p. 34). Hughes (2003, p. 22) proposed several principles for improving customer service delivery:

- Assess the organization's capabilities and weaknesses and strengthen its capacity to serve customers.
- Build long-term relationships by supporting customers after a transaction and confirming their satisfaction with the service or product received.
- Place customers first by improving service quality to meet their expectations, understanding their needs, and responding to those needs effectively.
- Communicate with customers, listen to them, identify their needs, and determine how future services can be improved.
- Strengthen employees' commitment to quality assurance in customer service.
- Avoid blaming employees in front of customers. Instead, analyze the situation, apologize, and provide appropriate compensation in a professional and composed manner.

In this study, service excellence refers to the delivery of diverse services in a manner that meets beneficiaries' expectations and secures their satisfaction.

3. Leadership Excellence

Senior leadership directly shapes organizational excellence by developing employees' capabilities and encouraging creativity and outstanding performance. Effective leaders demonstrate strong leadership skills, build productive working relationships, promote original thinking, and encourage constructive competition that generates new ideas (Borghini, 2013, p. 232). The principal driver of organizational excellence is leadership that envisions the future and works persistently to realize it (Jankalová & Jankal, 2020, p. 24). Al-Adwan and Forrester (2016, p. 305) associated leadership excellence with a leader's capacity to exploit organizational opportunities, create development opportunities, and support practices that help the institution navigate complex operations and crises. Al-Amri (2017, p. 121) further linked leadership excellence to effective working relationships, innovative thinking, constructive competition, an open-door policy, decentralization, and incentive systems that encourage employees to improve performance outcomes.

In this study, leadership excellence refers to SFD managers' ability to mobilize effort and direct organizational capabilities toward high levels of achievement. It also encompasses their ability to develop employees' skills and encourage creativity and excellence in job performance.

4. Human Excellence

Human excellence entails maximizing employees' contributions through development, participation, and positive support. It also requires cultural values that foster trust, openness, and empowerment, as well as employees who approach their responsibilities with enthusiasm and possess strong intellectual and creative capabilities (Marti & Cabrita, 2012, p. 120). Aqili (2018, p. 21) explained that the human dimension includes all organizational employees, both supervisors and subordinates, who perform the institution's functions within an organizational culture that guides, regulates, and aligns their behavior.

In this study, human excellence refers to the human element that underpins the successful implementation of management information systems. Empowering employees through training, motivation, participation in decision-making, and encouragement of creativity and innovation plays a central role in achieving organizational excellence.

Prior Empirical Studies

Prior studies provide empirical support for the proposed theoretical relationships. Muhammad and Ibrahim (2022) reported a significant relationship between management information systems and performance excellence at Mobilis Telecommunications in Algeria. Awad (2021) found a significant association between information systems and organizational excellence in Jordanian insurance companies. Rizk (2020) reported a similar relationship in nongovernmental health institutions in the Gaza Strip. Al-Nayir (2018) and Abkar (2018) also found significant associations between management information systems and organizational excellence in Sudanese telecommunications companies.

Although these studies generally report positive relationships, most focus on commercial or health-sector organizations. Limited evidence is available from donor-supported development institutions operating in fragile and conflict-affected environments. The present study addresses this contextual gap by examining the relationship between MIS capabilities and organizational excellence across the headquarters and nine branches of the SFD in Yemen. It also applies an integrated theoretical perspective to explain how technological, informational, and human MIS resources may support organizational excellence. Recent international literature conceptualizes digital transformation as an organizational change process rather than the simple adoption of technology. Digital resources generate value when they are integrated with leadership,

employee capabilities, organizational structures, and adaptive processes (Hanelt et al., 2021; Verhoef et al., 2021). Public-sector evidence also indicates that digitally induced change depends on technological infrastructure, organizational readiness, leadership quality, collaboration, and implementation capacity (Haug et al., 2024).

These insights are relevant to the SFD because it operates across geographically dispersed branches and manages complex relationships with communities, government institutions, implementing partners, and donors. However, limited research has examined the relationship between MIS capabilities and organizational excellence in donor-supported development institutions operating in fragile and conflict-affected environments. The present study addresses this gap and examines whether technological, informational, and human MIS capabilities are associated with organizational excellence at the SFD in Yemen. This study makes three contributions. First, it extends MIS and organizational excellence research to a donor-supported development institution operating in a fragile and conflict-affected environment. Second, it examines MIS as a multidimensional capability comprising technological, informational, and specialized human capabilities rather than as a purely technical system. Third, it identifies a capability–outcome gap between the high level of MIS use and the moderate level of organizational excellence. This gap highlights the importance of complementary leadership, human, and organizational capabilities in transforming information system resources into broader institutional excellence.

Theoretical Foundations and Hypothesis Development

The relationship between management information systems and organizational excellence can be explained through an integrated theoretical perspective combining the resource-based view, dynamic capabilities theory, and organizational information processing theory. Together, these perspectives explain how information system resources can be transformed into organizational capabilities and, subsequently, into superior organizational outcomes.

The resource-based view suggests that organizations achieve superior performance when they possess and effectively deploy valuable resources and capabilities (Barney, 1991). From this perspective, MIS hardware, communication networks, software, databases, and specialized human resources constitute an integrated portfolio of organizational resources. However, technology alone does not create organizational value. Its contribution depends on the institution's ability to combine technological resources with employee expertise, managerial practices, and organizational processes. At the SFD, the effective integration of these resources can improve information accessibility, coordination, process efficiency, and service delivery. These

improvements are expected to be positively associated with organizational excellence.

Dynamic capabilities theory extends this argument by emphasizing an organization's ability to sense environmental changes, respond to emerging needs, and reconfigure its resources and processes (Teece et al., 1997). This perspective is particularly relevant to the SFD because it operates in a volatile development environment characterized by changing community needs, donor requirements, funding conditions, and operational constraints. Management information systems can strengthen the SFD's capacity to identify changes, coordinate institutional responses, and adjust its activities and resource allocations. MIS capabilities may therefore support operational, service, leadership, and human excellence.

Organizational information processing theory further explains how information systems can reduce uncertainty and improve coordination and decision-making (Galbraith, 1974; Tushman & Nadler, 1978). Organizations operating in complex environments require sufficient capacity to collect, process, share, and interpret information. Hardware and communication networks facilitate connectivity, software supports the execution and integration of tasks, databases provide accessible and reliable information, and MIS-related human resources convert technological resources into useful organizational knowledge. Collectively, these capabilities can improve the quality and timeliness of decisions and strengthen organizational alignment.

These theoretical perspectives suggest that MIS resources contribute to organizational excellence through three related mechanisms. First, they provide the technological and human resource base required for institutional operations. Second, they strengthen the organization's capacity to respond and adapt to environmental change. Third, they reduce information uncertainty and improve coordination and decision-making. Accordingly, the present study expects a positive association between management information systems and organizational excellence at the SFD.

Methodology

Given the nature and objectives of the study, a descriptive-analytical design was adopted. This design is widely used to examine human and social phenomena.

Study Population and Sample

The study population comprised 580 employees working at the SFD's headquarters and nine branches across Yemen. It included deputy unit heads, deputy branch managers, senior project officers, project officers, assistant project officers, and administrative assistants. The required sample size was

determined using the Krejcie and Morgan (1970) sample-size table for a finite population.

A disproportionate stratified sampling procedure was used to ensure adequate representation of the smaller occupational categories. The target sample comprised 232 employees, representing 40% of the study population. Smaller occupational strata were intentionally oversampled, whereas project officers were sampled at a lower proportion than their share of the population. Table 1 presents the population distribution, proportional allocation benchmark, and final target allocation by job title.

The analyses were conducted using unweighted data. Consequently, the overall descriptive estimates reflect the achieved sample distribution and should be generalized to the full SFD employee population with caution.

Table 1. *Population Distribution and Target Sample Allocation by Job Title*

N o.	Job title	Populat ion in stratu m	Percen tage (%)	Proporti onal allocatio n benchm ark	Final target allocat ion
1	Deputy unit head	12	2.1	5	8
2	Deputy branch manager	9	1.6	4	5
3	Senior project officer	70	12.1	28	42
4	Project officer	414	71.4	165	124
5	Assistant project officer	40	6.8	16	27
6	Administrative assistant	35	6.0	14	26
	Total	580	100	232	232

Note. Population data were obtained from the Social Fund for Development's Monitoring and Evaluation Unit, First Quarterly Monitoring Report (2024). The final target allocation was disproportionate to ensure adequate representation of the smaller occupational strata. Sampling weights were applied during the statistical analysis to restore the population proportions of the occupational categories.

The final analytical sample comprised 232 employees. Sampling weights were applied to account for the disproportionate allocation across occupational strata and to restore their representation in the study population. Sampling weights

were applied to account for the disproportionate allocation across occupational strata and to restore their representation in the study population.

A five-point Likert scale was used to record participants' responses to the questionnaire items. Response options were scored as follows: strongly agree (5), agree (4), neutral (3), disagree (2), and strongly disagree (1). Table 2 presents the criteria used to interpret the mean scores and relative weights reported in the results. The complete response rate was facilitated by direct institutional coordination and follow-up during questionnaire distribution and collection contributed to the complete response rate.

Table 2. *Interpretation of Five-Point Likert Scale Scores by Mean and Relative Weight*

Level	Mean range	Relative weight	Interpretation
Level 1	Less than 1.80	Less than 36%	Very low (strongly disagree)
Level 2	1.81–2.60	36.1%–51.9%	Low (disagree)
Level 3	2.61–3.40	52.0%–68.0%	Moderate (neutral)
Level 4	3.41–4.20	68.1%–84.0%	High (agree)
Level 5	4.21–5.00	84.1%–100%	Very high (strongly agree)

Note. Developed by the authors based on Pimentel (2010, p. 111).

Study Instrument

A questionnaire was used as the primary instrument for collecting field data because it was the most appropriate tool for achieving the study objectives. The management information systems scale, which measured the independent variable, comprised four dimensions: hardware and communication networks, software, databases, and MIS-related human resources. Each dimension contained five items, yielding a total of 20 items. The organizational excellence scale, which measured the dependent variable, comprised four dimensions: operational excellence, service excellence, leadership excellence, and human excellence. Operational excellence was measured using five items, whereas each of the remaining three dimensions was measured using six items. The organizational excellence scale therefore contained 23 items. Overall, the questionnaire comprised 43 substantive items.

Validity and Reliability of the Study Instrument

The questionnaire was reviewed by 13 expert assessors with expertise in management, scientific research, and information systems. Their comments and recommendations were incorporated into the final instrument. Internal consistency reliability was assessed using Cronbach's alpha, as reported in Table 3.

Table 3. *Cronbach's Alpha Reliability and Self-Validity Coefficients for the Study Instrument*

No.	Construct and dimension	Items	Cronbach's α	Self-validity coefficient
1	Hardware and communication networks	5	0.960	0.980
2	Software	5	0.967	0.983
3	Databases	5	0.974	0.987
4	MIS-related human resources	5	0.949	0.974
	Overall management information systems	20	0.987	0.993
1	Operational excellence	5	0.962	0.981
2	Service excellence	6	0.970	0.985
3	Leadership excellence	6	0.971	0.985
4	Human excellence	6	0.962	0.981
	Overall organizational excellence	23	0.982	0.991

Note. Developed by the authors based on the questionnaire analysis. The self-validity coefficient was calculated as the square root of Cronbach's alpha.

As shown in Table 3, all Cronbach's alpha coefficients exceeded the minimum acceptable threshold of 0.60. The coefficients for the individual dimensions ranged from 0.949 to 0.974, while the coefficients for the two overall constructs were 0.987 for management information systems and 0.982 for organizational excellence. These results indicate a high degree of internal consistency and support the instrument's reliability for the purposes of this study.

A self-validity coefficient was also calculated as the square root of Cronbach's alpha to provide an additional indication of the instrument's measurement adequacy. The coefficients for all constructs and dimensions exceeded the required level. The lowest coefficient was 0.974, as reported in Table 3. These values support the instrument's suitability for measuring the intended constructs.

Data Collection and Ethical Considerations

Data were collected between April and May 2025 using paper-based questionnaires. Formal institutional permission was obtained from the Social Fund for Development before data collection. Ethical approval was granted by the Sana'a University Ethics Committee under Approval No. 10, dated February 15, 2025. Participation was voluntary, and informed consent was obtained from all participants before questionnaire completion. Participants were informed of the study's purpose, the confidentiality of their responses, and their right to decline participation or withdraw without penalty. The questionnaires were anonymous and did not collect directly identifying personal information. The data were used exclusively for research purposes and were analyzed and reported in aggregate form.

The questionnaires were distributed and collected through direct coordination with the relevant units and branches of the SFD. A total of 232 questionnaires were distributed, and all were returned and retained for analysis. No questionnaires were excluded because of missing or invalid responses. Direct institutional coordination and follow-up contributed to the valid response rate of 100%.

Results

Answers to the Research Questions

The main research question examined the relationship between management information systems and organizational excellence at the Social Fund for Development in Yemen. The two descriptive subquestions were addressed first, followed by the hypothesis tests.

Management Information Systems Use

The first subquestion asked: What is the current level of management information systems use at the Social Fund for Development in Yemen? Means, standard deviations, relative application levels, and verbal interpretations were calculated to answer this question. The results are presented in Table 4.

Table 4. *Descriptive Statistics for the Dimensions of Management Information Systems*

No.	Dimension	Rank	Mean	SD	Application level (%)	Interpretation
1	Hardware and communication networks	1	3.79	0.67	76	High
2	Software	2	3.73	0.68	75	High
3	Databases	3	3.71	0.72	74	High

4	MIS-related human resources	4	3.64	0.73	73	High
	Overall management information systems		3.73	0.64	75	High

Note. Developed by the authors based on the questionnaire analysis.

Table 4 shows that the overall mean for management information systems use at the SFD was 3.73, indicating a high level of use. The corresponding standard deviation was 0.64. This value indicates relatively limited dispersion in participants' assessments of MIS use. Mean scores across the four dimensions ranged from 3.64 for MIS-related human resources to 3.79 for hardware and communication networks. The scores were relatively close, although small differences determined their ranking. Hardware and communication networks ranked first, followed by software, databases, and MIS-related human resources. The findings therefore answer the first subquestion by showing that management information systems are used at a high level at the SFD in Yemen. This result fulfills the first study objective. It may reflect the SFD leadership's recognition of MIS as a central mechanism for improving and developing organizational performance. It may also reflect the institution's investment in modern hardware, communication networks, and software designed to protect information across SFD projects. Together, these capabilities can support the pursuit of organizational excellence. This finding is consistent with the high levels reported by Awad (2021), Rizk (2020), Abkar (2018), and Al-Nayir (2018).

Organizational Excellence

The second subquestion asked: What is the level of organizational excellence at the Social Fund for Development in Yemen? Means, standard deviations, relative application levels, and verbal interpretations were calculated. The results are presented in Table 5.

Table 5. Descriptive Statistics for the Dimensions of Organizational Excellence

No.	Dimension	Rank	Mean	SD	Application level (%)	Interpretation
1	Operational excellence	2	3.39	0.90	68	Moderate
2	Service excellence	1	3.40	0.94	68	Moderate
3	Leadership excellence	3	3.38	0.91	68	Moderate

4	Human excellence	4	3.36	0.90	67	Moderate
	Overall organizational excellence		3.38	0.83	68	Moderate

Note. Developed by the authors based on the questionnaire analysis.

As shown in Table 5, the overall mean for organizational excellence at the SFD was 3.38, indicating a moderate level. The standard deviation was 0.83. Mean scores for the four dimensions ranged from 3.36 for human excellence to 3.40 for service excellence. Service excellence ranked first, followed by operational excellence, leadership excellence, and human excellence.

The findings therefore answer the second subquestion by showing that organizational excellence at the SFD is moderate. This result fulfills the second study objective. The contrast between high MIS use and moderate organizational excellence represents an important capability–outcome gap. The SFD appears to possess a relatively strong technological and information infrastructure, but these resources have not yet translated into an equally high level of organizational excellence. One possible explanation is that information systems require complementary organizational capabilities, including workforce continuity, leadership support, process integration, and employee participation. The SFD's reliance on donor-funded projects and project-based employment may also limit the continuity of institutional knowledge and employee development. However, because donor dependence and employment continuity were not directly measured, this explanation should be treated as a contextual interpretation rather than an empirically tested mechanism. The result is consistent with the moderate levels reported by Awad (2021) and Al-Nayir (2018), but differs from the high levels reported by Rizk (2020) and Abkar (2018).

Hypothesis Testing

This section tests the study hypotheses to determine whether management information systems and their dimensions are significantly associated with organizational excellence at the Social Fund for Development in Yemen.

Main Hypothesis (H1)

H1 states that management information systems, as represented by hardware and communication networks, software, databases, and MIS-related human resources, are positively and significantly associated with organizational excellence at the Social Fund for Development in Yemen. Simple linear regression was used to examine the overall statistical relationship between the two constructs. Table 6 presents the results.

Table 6. *Association between Management Information Systems and Organizational Excellence*

Dependent variable	Independent variable	R	R ²	F	p (model)	B	t	p (coefficient)
Organizational excellence	Management information systems	0.570	0.325	110.924	< .001	0.736	10.532	< .001

Note. Developed by the authors based on the questionnaire analysis. B denotes the unstandardized regression coefficient. Reported values of .000 were expressed as $p < .001$ in accordance with APA 7.

Table 6 indicates a positive and statistically significant association between management information systems and organizational excellence ($R = .570$, $p < .001$). The coefficient of determination ($R^2 = .325$) shows that MIS scores accounted for 32.5% of the observed variance in organizational excellence scores. The regression coefficient was positive and statistically significant ($B = 0.736$, $t = 10.532$, $p < .001$), and the overall model was statistically significant, $F(1, 230) = 110.924$, $p < .001$. These findings support H1 and indicate that higher MIS scores are associated with higher organizational excellence scores. However, because the data are cross-sectional, the results should not be interpreted as evidence of a causal effect.

Subhypothesis Tests

Separate simple linear regression models were estimated to examine the associations between the four MIS dimensions and organizational excellence. Each dimension was entered as the sole explanatory variable in a separate model. Therefore, the resulting coefficients represent bivariate associations and should not be interpreted as unique or causal effects. The results are presented in Table 7.

Table 7. *Separate Simple Regression Results for the Associations Between MIS Dimensions and Organizational Excellence*

MIS dimension	R	R ²	F	p (model)	B	t	p (coefficient)	Decision
Hardware and communication networks	.557	.310	103.567	< .001	.691	10.177	< .001	H1a supported
Software	.559	.313	104.706	< .001	.678	10.233	< .001	H1b supported

Databases	.539	.290	94.100	< .001	.623	9.700	< .001	H1c supported
MIS-related human resources	.532	.283	90.582	< .001	.605	9.517	< .001	H1d supported

Note. Dependent variable: organizational excellence. Each MIS dimension was tested in a separate simple regression model. B denotes the unstandardized regression coefficient. Values originally reported as .000 are presented as $p < .001$ in accordance with APA 7.

Hardware and Communication Networks (H1a)

H1a proposed that hardware and communication networks are positively associated with organizational excellence at the SFD in Yemen. The results showed a positive and statistically significant association ($R = .557$, $p < .001$). Hardware and communication network scores accounted for 31.0% of the observed variance in organizational excellence scores when examined as the sole explanatory variable ($R^2 = .310$). The regression coefficient was positive and statistically significant ($B = 0.691$, $t = 10.177$, $p < .001$), and the overall model was significant, $F(1, 230) = 103.567$, $p < .001$. These findings support H1a but do not establish a causal relationship.

Software (H1b)

H1b proposed that software is positively associated with organizational excellence at the SFD in Yemen. The results showed a positive and statistically significant association ($R = .559$, $p < .001$). Software scores accounted for 31.3% of the observed variance in organizational excellence scores when examined as the sole explanatory variable ($R^2 = .313$). The regression coefficient was positive and statistically significant ($B = 0.678$, $t = 10.233$, $p < .001$), and the overall model was significant, $F(1, 230) = 104.706$, $p < .001$. These findings support H1b but should not be interpreted as evidence of a causal effect.

Databases (H1c)

H1c proposed that databases are positively associated with organizational excellence at the SFD in Yemen. The results showed a positive and statistically significant association ($R = .539$, $p < .001$). Database scores accounted for 29.0% of the observed variance in organizational excellence scores when examined as the sole explanatory variable ($R^2 = .290$). The regression coefficient was positive and statistically significant ($B = 0.623$, $t = 9.700$, $p < .001$), and the overall model was significant, $F(1, 230) = 94.100$, $p < .001$. These findings support H1c but do not demonstrate causality.

MIS-Related Human Resources (H1d)

H1d proposed that MIS-related human resources are positively associated with organizational excellence at the SFD in Yemen. The results showed a positive and statistically significant association ($R = .532$, $p < .001$). MIS-related human resource scores accounted for 28.3% of the observed variance in organizational excellence scores when examined as the sole explanatory variable ($R^2 = .283$). The regression coefficient was positive and statistically significant ($B = 0.605$, $t = 9.517$, $p < .001$), and the overall model was significant, $F(1, 230) = 90.582$, $p < .001$. These findings support H1d but should not be interpreted as evidence that MIS-related human resources cause organizational excellence.

Overall, all four MIS dimensions were positively and significantly associated with organizational excellence in the separate simple regression models. Software showed the strongest bivariate association, followed closely by hardware and communication networks, databases, and MIS-related human resources. However, the differences in explained variance were small. Because each dimension was tested separately, the results do not establish the unique contribution of any dimension after controlling for the others. They also do not demonstrate causal effects. A multiple regression model is required to estimate the independent statistical contribution of each MIS dimension.

Discussion

The findings showed a positive and statistically significant association between management information systems and organizational excellence at the SFD. MIS scores accounted for 32.5% of the observed variance in organizational excellence scores. This finding supports the resource-based view by indicating that hardware, software, databases, communication networks, and MIS-related employee capabilities represent complementary organizational resources. It also supports organizational information processing theory because these resources can strengthen information availability, coordination, and decision-making.

A particularly important finding is the capability–outcome gap between the high level of MIS use and the moderate level of organizational excellence. This gap indicates that technological and informational resources may be necessary but insufficient for organizational excellence. Their value depends on complementary capabilities, including leadership support, employee development, workforce continuity, process integration, and organizational learning. This interpretation is consistent with recent literature showing that digital transformation requires organizational capabilities and structural change rather than technological adoption alone (Hanelt et al., 2021; Haug et al., 2024; Verhoef et al., 2021).

Hardware and communication networks ranked first among the MIS dimensions, followed by software. This pattern may reflect the SFD's need to maintain

connectivity across its headquarters, nine branches, projects, and external stakeholders. Software showed the strongest bivariate association with organizational excellence, although its explained variance was only slightly higher than that of hardware and communication networks. Because the dimensions were tested in separate regression models, this difference should not be interpreted as evidence that software makes the strongest unique contribution.

Human excellence received the lowest mean among the organizational excellence dimensions. This finding may indicate that technological development has progressed more rapidly than employee development, participation, recognition, and retention. Project-based employment and dependence on donor funding may also affect workforce continuity. However, these factors were not directly measured and should therefore be treated as contextual explanations rather than empirically established causes.

The findings are consistent with Awad (2021), Al-Nayir (2018), Rizk (2020), and Abkar (2018), who reported positive relationships between information systems and organizational excellence. The present study extends this evidence to a donor-supported development institution operating in a fragile and conflict-affected environment. It also demonstrates that a high level of MIS use does not necessarily correspond to an equally high level of organizational excellence.

The findings have practical implications for the SFD. Technological investments should be accompanied by employee development, leadership support, process integration, and information governance. The SFD should assess its digital systems in terms of their contribution to decision quality, operational efficiency, service delivery, and beneficiary satisfaction rather than system availability alone.

Alternative explanations should also be considered. Organizational excellence may increase an institution's capacity to invest in MIS, while both constructs may be influenced by leadership quality, funding availability, branch size, workforce stability, or environmental uncertainty. Consequently, the findings demonstrate statistical associations but do not establish causal relationships.

Limitations

This study has several limitations. First, its cross-sectional design captures employee perceptions at one point in time and does not establish causal or temporal relationships. Second, the study was conducted within a single development institution, which limits the generalizability of its findings to other organizations and national contexts.

Third, the independent and dependent variables were measured using the same self-reported questionnaire at a single point in time. The observed associations

may therefore be affected by common method bias, consistency motives, or social desirability. Anonymous participation, response confidentiality, and the absence of directly identifying information were used to reduce evaluation apprehension. However, no direct statistical assessment of common method bias was conducted. Future studies should use temporal separation, multiple data sources, or an appropriate marker variable. Fourth, the study used a disproportionate allocation across occupational categories to ensure adequate representation of the smaller strata. Sampling weights were applied to restore the population proportions of these categories and improve population-level estimates. However, the absence of separate analyses by branch may limit the identification of potential branch-level differences.

Finally, the study did not directly measure political instability, security conditions, donor dependence, funding uncertainty, workforce continuity, or leadership support. These factors may influence both MIS capabilities and organizational excellence. Future longitudinal and multi-source studies should incorporate these variables and examine their mediating or moderating roles.

Conclusion

This study extends MIS and organizational excellence research to a donor-supported development institution operating in a fragile and conflict-affected context. The findings show that MIS capabilities are positively associated with organizational excellence at the SFD. However, the high level of MIS use and the moderate level of organizational excellence reveal a capability–outcome gap. This gap suggests that technological and informational resources alone may be insufficient without complementary human, leadership, and process capabilities. Although the cross-sectional design does not permit causal conclusions, the study provides a foundation for understanding how information system resources operate within development institutions facing funding uncertainty, project-based employment, and complex stakeholder requirements. The SFD should continue evaluating and updating its information systems while strengthening employee capabilities, supporting creativity, and embedding a comprehensive culture of organizational excellence.

Findings

1. Management information systems and all four of their dimensions were rated at a high level by study participants. The dimensions were ranked as follows: hardware and communication networks, software, databases, and MIS-related human resources. Differences among their mean scores were small.

2. Organizational excellence and its four dimensions were rated at a moderate level. The dimensions were ranked as follows: service excellence, operational excellence, leadership excellence, and human excellence. Differences among their mean scores were also small.
3. Management information systems were positively and significantly associated with organizational excellence at the SFD ($R = .570$, $p < .001$). MIS scores accounted for 32.5% of the observed variance in organizational excellence scores. This result indicates a meaningful statistical relationship between the two constructs but does not establish that MIS improvements directly cause higher organizational excellence.
4. Each MIS dimension—hardware and communication networks, software, databases, and MIS-related human resources—was positively and significantly associated with organizational excellence when examined in a separate simple regression model. These findings represent bivariate associations and not the unique or causal effect of each dimension.

Recommendations

1. The SFD should assess its existing hardware, software, databases, and communication networks to identify technical gaps, system duplication, information-quality problems, and user difficulties before approving additional investments.
2. Priority should be given to MIS-related human resources because this dimension received the lowest mean among the MIS dimensions. Training should focus on system use, data quality, analytical skills, report generation, and information security.
3. The SFD should establish regular user-feedback mechanisms across its headquarters and branches to identify technical and procedural barriers affecting information access and service delivery.
4. System upgrades and process automation should be implemented gradually on the basis of operational need, institutional readiness, cost-benefit analysis, and implementation risk.
5. The SFD should integrate its information systems with project monitoring, service delivery, and managerial decision-making processes.
6. Management should strengthen human excellence through professional development, employee participation, recognition of innovative contributions, and appropriate retention mechanisms.
7. The SFD should establish an MIS governance framework that defines system ownership, data-access rights, user responsibilities, data-quality standards, backup procedures, and accountability mechanisms.

8. Cybersecurity requirements should be incorporated into all system-development decisions through regular security assessments, access-control reviews, backup testing, and employee awareness programs.
9. The SFD should monitor system availability, response time, data-error rates, security incidents, user satisfaction, and employee completion of MIS training.
10. Organizational outcomes should be monitored through project-completion time, service-processing time, beneficiary satisfaction, employee participation, and the proportion of management decisions supported by timely information reports.

Future Research

Future research should examine the mechanisms through which MIS capabilities are translated into organizational excellence. Decision quality and organizational agility may mediate this relationship because information systems can improve the availability of information and strengthen institutional responsiveness. Leadership support, environmental uncertainty, donor dependence, and workforce continuity may also moderate the relationship by strengthening or constraining the organizational value generated by MIS capabilities. Longitudinal or multi-source designs are recommended to test these mechanisms and provide stronger evidence regarding temporal and causal relationships.

Ethical Considerations

This study was conducted in strict accordance with the ethical principles of the Declaration of Helsinki. The research design, survey instruments, and data collection protocols were formally reviewed and approved by the Research Ethics Committee of Sana'a University (Ethics Approval Protocol Number: SU-2024-ETH-5). Written informed consent was explicitly obtained from all academic and administrative leaders before data collection commenced. All participant data were fully anonymized and analyzed in aggregate.

Conflict of Interest

The authors declare that there are no conflicts of interest regarding the publication of this manuscript.

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Use of Artificial Intelligence

The authors declare that artificial intelligence (AI) tools were used solely as a language assistance tool to improve the clarity, grammar, and readability of the manuscript. These tools were not used for generating, analyzing, or interpreting the research data, nor for drawing any scientific conclusions. All research design, data collection, statistical analysis, interpretation of results, and manuscript writing were conducted entirely by the authors. The authors take full responsibility for the content and integrity of the manuscript.

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