

Impact of Information Systems on Organizational Agility at the Social Fund for Development in Yemen

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Abstract:

This study investigates the impact of information systems (IS), across their dimensions (Hardware and Communication Networks, Software, Databases, and Human Resources), on the organizational agility of the Social Fund for Development in Yemen. It also assesses the current levels of IS implementation and organizational agility within the institution. Employing a descriptive-analytical approach, data were collected from 232 employees (a sample of the 580 total staff) via a questionnaire and analyzed using SPSS V27. The results demonstrate a statistically significant impact of IS, across all dimensions, on organizational agility. Furthermore, while the overall level of IS utilization and organizational agility was rated as "High," the dimension of decision-making agility was rated "Medium." Based on these findings, the study recommends the continuous evaluation and updating of IS to ensure the timely, accurate, and efficient delivery of information. Additionally, it suggests a clearer definition and delegation of authority at each administrative level and calls for further research to explore this relationship in different contexts and with other dimensions.

Keywords: Information Systems, Organizational Agility, Social Fund for Development.

Introduction

Amidst a dynamic and competitive landscape, organizational agility is a critical competency for managing change and risk. It refers to an organization's ability to survive and thrive by rapidly responding to market fluctuations, which involves formulating effective strategies (Radwan, 2014). Predicated on speed, flexibility, and innovation, agile organizations view change not as a threat but as an opportunity to secure a competitive advantage (Maghawri, 2016).

Tallon and Pinsonneault (2011) emphasize that Information Systems (IS) are essential components of an organization's effectiveness. IS enhances the organization's capacity to perceive changes in both the internal and external environments and respond to them swiftly.

Moreover, Information Systems are regarded as one of the fundamental factors of production alongside capital and human resources, thereby constituting a strategic advantage for various enterprises. This background elucidates the growing interest in examining the relationship between Information Systems and Organizational Agility as a means of strengthening organizations' abilities to meet contemporary challenges.

A literature review reveals the nature of this crucial relationship. Specifically, studies by Osman (2024), Ali et al. (2021), Antar (2019), and Panda and Rath (2018) consistently demonstrate a statistically significant positive correlation between Organizational Agility and Information Systems Technology (IS/IT).

Antar (2019) recommended that organizations and institutions develop a comprehensive IS strategy to achieve full Organizational Agility. Similarly, Schryen (2013) asserted that the link between Information Systems and achieving institutional agility remains a paramount research topic for scholars. Additionally, Weill et al. (2002) highlighted that Information Systems are the "direct determinant" of an organization's capability to respond effectively to external threats and available opportunities.

In the highly volatile Yemeni environment, the Social Fund for Development (SFD) has emerged as a pivotal national institution that continues to deliver crucial developmental and humanitarian services despite challenging national circumstances. By collaborating with national and local initiatives and international humanitarian organizations, the SFD strengthens humanitarian response efforts, particularly by providing urgent short-term aid to internally displaced persons (IDPs) and mitigating food insecurity (Social Fund for Development, 2020, p. 4).

In a previous World Bank report, Al-Hmadi and De Silva (2018) highlighted SFD's commendable high performance and transparency in service delivery.

Nevertheless, internal reports and field observations indicate a gap between the latent capabilities of information systems and the funds' actual ability to adapt swiftly to the surrounding variables. This gap exists because certain operations still rely on complicated bureaucratic procedures, and data often flow in an unintegrated manner, collectively obstructing proactive and rapid decision-making (Social Fund for Development, 2022).

Consequently, the research gap, informed by the review of previous reports and studies, is defined by the need to investigate the impact of Information Systems (IS) on Organizational Agility within the Social Fund for Development (SFD) in Yemen.

To the best of our knowledge, no prior local Yemeni study has comprehensively addressed the relationship between these two critical variables specifically within the context of the SFD. This represents a significant research gap that this study aims to address.

Research Question

Therefore, the study's problem statement was formulated through the following main research question:

What is the impact of Information Systems (IS) on Organizational Agility at the Social Fund for Development (SFD) in Yemen?

The following sub-questions branch from the main research question:

1. What is the current status of information system utilization in the Social Fund for Development (SFD) in Yemen?
2. What is the extent (or level) of Organizational Agility at the Social Fund for Development (SFD) in Yemen?

Objectives of the Study

The primary objective of this study is to identify the impact of Information Systems (IS) on Organizational Agility within the Social Fund for Development (SFD) in Yemen.

This overarching goal will be achieved by pursuing the following sub-objectives:

1. To determine the current status of Information Systems utilization at the Social Fund for Development (SFD) in Yemen.
2. To assess the level of Organizational Agility at the Social Fund for Development (SFD) in Yemen.

Hypotheses of the Study

The hypotheses for this study were formulated to test the proposed relationships between the independent variable (Information Systems) and the dependent variable (Organizational Agility).

Main Hypothesis: H1: There is a statistically significant effect of Information Systems (IS), across all its dimensions (Hardware and Communication Networks, Software, Databases, and Human Resources), on Organizational Agility at the Social Fund for Development (SFD) in Yemen.

Sub-Hypotheses: The following sub-hypotheses investigate the specific contribution of each IS dimension:

- H1a (hardware): There is a statistically significant effect of the hardware and communication network dimensions on Organizational Agility at the SFD in Yemen.
- H1b (Software): There is a statistically significant effect of the software dimension on Organizational Agility at the SFD in Yemen.
- H1c (Databases): There is a statistically significant effect of the database dimension on Organizational Agility at the SFD in Yemen.
- H1d (Human Resources): The Human Resources dimension has a statistically significant effect on Organizational Agility at the SFD in Yemen.

Literature Review and Theoretical Framework

1. Information Systems (IS)

Information Systems (IS), with their various components and characteristics, have become recognized as fundamental strategic resources that significantly contribute to the development and success of contemporary organizations. Information Systems (IS) plays an effective role in transforming organizational inputs into accurate outputs, concurrently improving performance, accelerating task completion, and fostering organizational survival and growth.

Furthermore, the primary objective of IS is to develop and utilize information technologies to effectively plan and organize activities, thereby achieving an organization's overarching strategic goals (Al-Manaseer et al., 2019).

Information Systems are defined as the "interaction among human resource skills, hardware and communication networks, software, and databases for processing, storing, retrieving, and providing data to various managerial levels in a timely and appropriate manner" (Alromimah & Alhakimi, 2024).

Conversely, Turban et al. (2013, p. 442) define IS as a technological aspect that includes hardware, networks, software, and databases, which constitute essential resources for the organization. They emphasized that these dimensions are necessary and mutually

complementary, asserting that the system cannot operate effectively without any of these dimensions. Consequently, organizations must fully incorporate them to gain the complete benefits of Information Systems.

Based on the preceding literature, researchers operationally define Information Systems as integrated systems comprising computer hardware, communication networks, programs (software), databases, and human resources utilized within the Social Fund for Development (SFD) for the purpose of collecting, processing, organizing, storing, and circulating data and information among departments and relevant stakeholders.

Information Systems comprise four fundamental dimensions that collectively constitute an organization's essential resources (O'Brien and Marakas, 2010, p. 7). The first of these is:

- a) Hardware: Hardware constitutes the physical infrastructure of an information system, encompassing tangible components such as keyboards, monitors, central processing units (CPUs), and storage devices. These elements are fundamental for executing computer operations and providing the operating environment for software (Tanenbaum & Austin, 2013). More broadly, hardware is defined as the entire suite of tools and peripheral devices that facilitate the core information processes of input, storage, processing, retrieval, and communication for users (Malakawi & Al-Gharaybeh, 2022, p. 4).

In this study, hardware is defined as the physical component of a computer system, including all tangible devices and their peripherals, such as monitors, keyboards, mice, and printers.

Networks are linked systems that enable communication and resource sharing. Al-Hamami and Alani (2007, p. 54) define networks as groups of interconnected computers that allow individuals to communicate, share data, exchange information, and participate in discussion forums, as well as other forms of formal correspondence. Similarly, Stair and Reynolds (2012, p. 12) define networks as "the connection of computers and equipment in one building, across a country, or globally to enable electronic communication."

In this study, networks are operationally defined as the specific networking infrastructure utilized by the Social Fund for Development (SFD), which links computer systems at the main headquarters with its various branches. Furthermore, this infrastructure facilitates external connectivity with different

stakeholders, including commercial banks, financiers, donors, and implementation partners, to ensure seamless information exchange.

- b) **Software:** Software represents the intangible, non-physical components of an information system, the set of programs and instructions that direct hardware operations. According to Shelly and Rosenblatt (2012), this encompasses operating systems, application software, and procedures, all of which are used to operate computers and execute specific tasks.
- c) **Databases:** Databases constitute a fundamental repository of structured organizational data. Qarash (2021, p. 77) defines a database as "an organized collection of structured information or data stored in a computer system." More specifically, Majdalawi et al. (2013, p. 141) describe it as a structured and integrated collection designed to serve multiple applications through centralized control and the prevention of data redundancy. Unlike traditional file-based systems that store data separately for each application, a database presents this information as a single, unified source, thereby enhancing both efficiency and accessibility.

Based on these definitions, the researchers operationally define databases as the data assets held by the SFD, which are compiled from internal sources (such as units and branches) and external sources from relevant government entities, including the Central Statistical Organization, the Ministry of Education and Scientific Research, and the Ministry of Health and Environment. These data are managed using Management Information Systems (MIS) and, once analyzed, are utilized by the fund to achieve its organizational objectives.

- d) **Human Resources (HR):** Human Resources are considered the most crucial nontechnical components of Information Systems. Yahawi (2017, p. 12) asserted that individuals are the most essential requirement for IS operations and procedures, encompassing both end-users and technical specialists responsible for system operation.

Sharma (2020) defines this as the pool of qualified human resources, characterized by three key attributes: (1) possessing the requisite skills for their roles, (2) demonstrating the motivation to perform with conviction, and (3) actively participating in organizational policy-making and goal-setting.

In line with the systems view, researchers operationally define Human Resources as the specific skills required for the management, operation, and utilization of an SFD's Information Systems (including

hardware, networks, software, and databases). This encompasses the expertise of specialized individuals responsible for IS administration and operation, as well as the general user base within the Social Fund.

2. Organizational Agility

Organizational agility emerged as a concept in contemporary management in the early 1990s, driven by the realization that business environments were evolving at a pace exceeding the adaptive capacity of most companies. The term itself was first coined at the Iacocca Institute of Lehigh University (Alharbi, 2021, p. 2996).

Organizational agility is conceptualized as a multifaceted capability essential for navigating dynamic business environments. Hamdan and Abdul Rahman (2021, p. 91) define it as a set of practices that enable an organization to sense and avoid threats, detect and capitalize on opportunities, and respond rapidly to change, thereby achieving a competitive advantage. This is further described by Chen et al. (2014, p. 3) as "a set of organizational capabilities that allow an institution to effectively sense changes in the work environment and respond to them on time," a process achieved through the continuous alignment of capabilities and resources to ensure efficiency while managing costs. Complementing these views, Mahmoudi (2015, p. 1143) emphasizes the element of speed, stating that agility signifies the extent to which institutions can respond to changes at an accelerated pace, anticipate employee needs, and create new opportunities through continuous innovation.

Based on the definitions above, researchers have noted a multiplicity of interpretations regarding organizational agility. However, they fundamentally agree on its essence: Organizational Agility is the organization's ability to adapt to changes in the surrounding environment, respond rapidly to these changes, sense and leverage opportunities, and keep pace with transformations. Furthermore, it involves anticipating threats and responding to them promptly by making flexible decisions at the right time, enabling the organization to achieve its objectives with high efficiency.

3. Dimensions of Organizational Agility

Despite the variety of classifications for organizational agility dimensions in the literature, a consensus has emerged on three primary dimensions, which this study adopts: Sensing Agility, Decision-Making Agility, and Acting Agility.

- a) Sensing Agility: This refers to the organizational capability to scan and monitor events and changes in the surrounding

environment, such as shifting beneficiary preferences, competitor movements, and new technologies (Park, 2011, p. 24).

- The first step in sensing is a comprehensive understanding of the institution's internal and external environments to achieve full awareness of the trends, sources, types, and characteristics of change (Dongback & Ariel, 2008, p. 136).
 - Furthermore, sensing agility implies not only an institution's ability to identify change factors currently occurring in the internal or external environment, but also the capacity to anticipate and prepare for potential future changes. This is achieved by developing robust visions, plans, and strategies to confront these changes, continuously improving performance, and innovating new work methods that contribute to achieving effective goals and long-term sustainability (Chen et al., 2014, p. 74).
- b) Decision-Making Agility:** Decision-Making Agility is the organizational capacity to interpret events, formulate plans, and make effective decisions to navigate diverse environments (Aasi, 2023, p. 142). Given that decision-making is a core managerial function, it is aptly described as the "heart of management" (Kanaan, 2009, p. 93).

An agile organization discerns when to respond to change and when to make decisions based on three key criteria: the speed of decision-making, the feasibility of implementation, and the ability to respond rapidly to change. Additionally, involving employees in decision-making reduces the likelihood of resistance to changes associated with the decision (Al-Otaibi, 2022, p. 31).

- c) Practice Agility:** This is the ability to dynamically and radically reconfigure organizational resources, modify processes, restructure relationships based on actual plans, and introduce new products and services over time (Bilal & Abdullah, 2021, p. 245).

According to Abdel-Aal (2022, p. 17), Acting Agility encompasses the reallocation of organizational resources and the modification of business and management processes. These actions are guided by principles derived from prior decision-making, with the ultimate aim of responding to environmental changes, thereby enhancing the institution's competitiveness and strengthening its strategic leadership position.

Farihat (2019, p. 21) adds that Acting Agility also encompasses the actions of new competitive organizations in the market, such as

introducing new products and services and altering policies with strategic partners and major customers.

3. The Conceptual Model of Study Variables

Based on the theoretical framework presented above and drawing on previous studies, the researchers identified the dimensions of the variables as follows:

- The Independent Variable (*Information Systems*) is defined based on studies by Yasser and Sattar (2025), Al-Hammadi et al. (2023), Awad (2021), and Al-Mu'alimi (2021).
- The Dependent Variable (*Organizational Agility*): Dimensions were adopted based on studies such as Jalaam and Nasser (2025), Baghrib (2025), Qaid and Tawaf (2024), Abuhalhal (2023), and Al-Dosari and Al-Zamel (2021).

A conceptual model for the study's variables and their dimensions was subsequently developed.

Table 1: Conceptual model of the study variables

Independent Variable	H1	Dependent Variable
Information Systems		Organizational Agility
Devices and Networks	H1a	<ul style="list-style-type: none"> • Sensing Agility • Decision-Making Agility • Acting Agility
Software	H1b	
Databases	H1c	
Human Resources	H1d	

4. Previous Studies

Several previous studies related to the variables in this study have addressed the impact of Information Systems (IS) on Organizational Agility across various organizations and work environments. The most notable of these are as follows:

Osman (2024) aimed to explore the concept of administrative agility and its relationship with information technology in educational institutions, focusing on secondary school principals and their assistants in the Souq Al-Jumaa District in Libya. The study yielded several key findings, most notably the existence of a statistically significant relationship between administrative agility practices and

the use of information technology in the educational institutions under study.

Ali et al. (2021) evaluated the impact of information technology and business efficiency on organizational agility within public and private institutions and business organizations in Pakistan. The study yielded several key findings, most notably the existence of a significant and direct impact of information technologies and business efficiency on the quality of organizational agility across various organizations. Furthermore, the results confirmed that the level of digital competencies possessed by employees and institutions positively and significantly influences the speed and flexibility of organizations as well as their capacity to respond to diverse changes in the competitive environment.

Antar (2019) aimed to identify the fundamental requirements for information technology in Egyptian universities and assess the state of Strategic Agility at Sohag University as an applied model. Among its key findings was the significant role played by information systems technology in achieving strategic agility at Egyptian universities. The study also revealed that aspects of strategic agility at Sohag University were moderate.

Panda and Rath (2018) sought to evaluate the structural correlation between information technology capabilities and organizational agility. The extent to which technology can enhance organizational resilience in Indian financial institutions. The study's primary result indicates a strong, positive relationship between IT capabilities and organizational agility, demonstrating that technology effectively enables the achievement of higher organizational flexibility.

The review of previous studies highlights the urgent need for further research to combine Information Systems (IS) and Organizational Agility, especially in light of digital transformation and accelerating changes in the business environment. It should be noted that researchers generally agree on the positive role that IS plays in enhancing organizational agility within institutions and organizations, as information systems contribute to improving flexibility and rapid response to environmental variables. To the best of our knowledge, the current study is the first to combine these two variables (Information Systems and Organizational Agility) within the context of the Social Fund for Development in Yemen.

Study Methodology

Based on the nature of the research and its objectives, a descriptive analytical method was employed. This approach is considered to be

one of the most widely used methodologies for studying human and social phenomena.

Study Population and Sample

The study population consisted of 580 employees from the Social Fund for Development in Yemen, working across various administrative levels (e.g., Deputy Unit Head, Deputy Branch Director, Projects Officer, etc.) in the General Administration and its eight branches. Using Krejcie and Morgan's (1970) table, a sample size of 232 employees (40% of the population) was determined. A stratified proportionate random sampling method was employed to select participants, as shown in Table 2.

Table 2: Distribution of the Study Population and Sample by Functional Level

No.	Functional Level	Population Size	%	Proportional Stratified Sample	Non-proportional stratified sample (target)
1	Deputy Head of Unit	12	2.1	5	8
2	Deputy Director of Branch	9	1.6	4	5
3	First Projects Officer	70	12.1	28	42
4	Projects Officer	414	71.4	165	124
5	Assistant Projects Officer	40	6.8	16	27
6	Administrative Assistant	35	6.0	14	26
	TOTAL	580	100	232	232

Source: Social Fund for Development, 2024.

To measure the respondents' assessments and record their answers to the questionnaire items, the researchers used a Five-Point Likert Scale (Kothari, 2006, p. 207). This scale defines five response alternatives by assigning a specific quantitative value to each: Strongly Agree (5), Agree (4), Neutral (3), Disagree (2), and Strongly Disagree (1). The methods used to interpret the resulting mean values are presented in Table 3.

Table 3: Distribution of Five-Point Likert Scale Scores According to the Arithmetic Mean and Relative Importance.

Level	Arithmetic Mean	Relative Importance	Description
Level 1	Less than 1.80	Less than 36%	Very Low (Strongly Disagree)
Level 2	1.81 to 2.60	36.1% to 51.9%	Low (Disagree)
Level 3	2.61 to 3.40	52% to 68%	Medium (Neutral)
Level 4	3.41 to 4.20	68.1% to 84%	High (Agree)
Level 5	4.21 to 5	84.1% to 100%	Very High (Strongly Agree)

Source: Prepared by the researchers based on (Pimentel, 2010, p. 111).

Study Instrument

The study utilized a questionnaire as the main tool for collecting field data, given its suitability for achieving the research objectives. The questionnaire was structured around the study variables as follows:

1. Independent Variable (Information Systems - IS)
 - Dimensions: Hardware and Communication Networks, Software, Databases, and Human Resources.
 - Items: 5 items for each dimension, totaling 20 items.
2. Dependent Variable (Organizational Agility)
 - Dimensions: Sensing Agility, Decision-making Agility, and Acting Agility (Practice Agility).
 - Items: Six items for the first and third dimensions (Sensing Agility and Acting Agility), and five items for the second dimension (Decision-Making Agility), totaling 17 items.

Validity and Reliability of the Instrument

The questionnaire was initially presented to 13 referees/experts with extensive experience and knowledge in management, scientific research, and information systems, leveraging their expertise. Their observations and suggestions have been incorporated into the manuscript.

To calculate the instrument's reliability, the internal consistency between the items was measured using Cronbach's alpha coefficient, as presented in Table 4.

Table 4: Validity and Cronbach's Alpha Coefficients for Measuring the Reliability of the Study Instrument.

No.	Variables and Dimensions	Number of Questionnaire Items	Reliability (Alpha)	Validity
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	Human Resources	5	0.949	0.974
Independent Variable - Information Systems		20	0.987	0.993
1	Sensing Agility	6	0.871	0.933
2	Decision-Making Agility	5	0.794	0.891
3	Practice Agility	6	0.790	0.889
Dependent Variable - Organizational Agility		17	0.923	0.961

Source: Based on the researchers' analysis of the questionnaire.

Table 4 shows that all reliability coefficients exceeded the 0.60 threshold, confirming the reliability of the measurement instrument. The reliability coefficient values for all instrumental variables ranged from 0.923 to 0.987. These high values confirm the instrument's suitability for this study.

To ensure that the questionnaire was valid for measuring the constructs it was designed to assess, the Intrinsic Validity Coefficient (self-validity) was calculated by taking the square root of the reliability coefficient. The intrinsic validity coefficient for all variables and dimensions was above the required standard. The lowest dimension achieved a score of 0.889, as shown in the table above. This demonstrated that the questionnaire had sufficient validity for the intended measurements.

3. Results and Discussion

Answering the Study Questions:

To address the main research question of the study, which states: "What is the impact of Information Systems on Organizational Agility at the Social Fund for Development in Yemen?"

I. Presentation and Analysis of Responses to the First Sub-Question

The first sub-question of the study states: "*What is the reality of using Information Systems at the Social Fund for Development in Yemen?*"

To answer this question, arithmetic means, standard deviations (SD), and the level of application for the responses were calculated. The results are as follows:

Table 5: Arithmetic Means and Standard Deviations for the Dimensions of the Independent Variable, Information Systems

No.	Dimension	Rank	Arithmetic Mean	Standard Deviation	Application Level	Verbal Sig.
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	Human Resources	4	3.64	0.73	73%	High
Information Systems as a Whole			3.73	0.64	75%	High

Source: Prepared by the researchers based on the results of the questionnaire analysis.

Table 5 reveals that the utilization of information system dimensions at the Social Fund for Development in Yemen had an overall arithmetic mean of 3.73 (verbal interpretation: high) with a standard deviation of 0.64. This deviation value, less than one, suggests that the participants' assessments were highly homogeneous.

The arithmetic means for the information system dimensions ranged from 3.64 (Human Resources) to 3.79 (Hardware and Communication Networks), revealing a close clustering of values for all dimensions of the independent variable. Despite this proximity, a slight variation in the means established a clear priority ranking: Hardware and Communication Networks were ranked first, followed by Software, Databases, and Human Resources according to the study sample.

The first sub-question of this study can be addressed based on the statistical results in the preceding table. The level of information system utilization by the Social Fund for Development in Yemen was found to be high. The author attributes this outcome to several factors: the leadership's awareness of the critical role of information systems as a key component for enhancing performance, their

significant investment in modern hardware and contemporary communications networks, and their strong emphasis on implementing software that ensures a seamless workflow across all of the fund's projects.

II. Analysis of Responses to the Second Sub-Question

To address the second sub-question, "What is the level of organizational agility at the Social Fund for Development in Yemen?" The arithmetic means, standard deviations, and levels of implementation were calculated. The findings were as follows.

Table 6: Arithmetic Means and Standard Deviations for the Dimensions of the Dependent Variable, Organizational Agility

No.	Dimension	Rank	Arithmetic Mean	Standard Deviation	Application Level	Verbal Sig.
1	Sensing Agility	1	3.49	0.58	70%	High
2	Decision-Making Agility	3	3.37	0.51	%67	Medium
3	Practice Agility	2	3.45	0.49	%69	High
Organizational Agility as a Whole			3.44	0.48	%69	High

Source: Prepared by the researchers based on the results of the questionnaire analysis.

Table 6 indicates that the overall level of organizational agility at the Social Fund for Development in Yemen is high (mean = 3.44), with an implementation rate of 69 %, which is above average. A standard deviation of 0.48 (less than 1) suggests that the sample's responses were highly homogeneous. The means for the individual dimensions were closely clustered, ranging from 3.37 (Decision-Making Agility) to 3.49 (Sensing Agility). This slight variation established a clear priority order: Sensing Agility was ranked highest, followed by Practice Agility, and Decision-Making Agility.

The second sub-question can be answered based on the statistical results in the table. The level of organizational agility at the Social Fund for Development in Yemen was found to be high. This suggests that the Fund possesses the flexibility and adaptability to respond to

environmental changes, which in turn enhances the efficiency of its resource management. However, to bolster overall organizational agility, there is a need to improve decision-making agility by simplifying decision-making procedures and delegating greater authority.

Hypothesis Testing: This section presents the hypothesis testing, which aims to verify the impact of all dimensions of information systems on the organizational agility of the Social Fund for Development in Yemen.

Testing of Main Hypothesis H1: The hypothesis is stated as follows:

- H1: Information systems in their dimensions (Hardware and Communication Networks, Software, Databases, and Human Resources) have a statistically significant effect on organizational agility at the Social Fund for Development in Yemen. To test this hypothesis and determine the explanatory relationship between information systems and organizational agility in the fund, a simple linear regression was employed. The results are as follows.

Table 7: Results of the Effect of Information Systems on Organizational Agility

Mediating Variable: Organizational Agility							
Model Summary			ANOVA Test Results		Regression Rate and Test Results (T)		
Independent Variable :	Correlation Coefficient R	Coefficient of Determination (R ²)	F-value	Sig. 0.002	Beta β	T-Value	Sig. Level 0.002
Information Systems	0.198	0.139	9.371		0.147	3.061	

Source: Prepared by the researchers based on the results of the questionnaire analysis.

Table 7 reveals a statistically significant positive correlation between Information Systems (independent variable) and Organizational Agility (mediating variable), with a correlation coefficient of $R = 0.198$. The analysis shows that Information Systems account for 13.9% of the variance in organizational agility ($R^2 = 0.139$) in the Social Fund for Development. This suggests a positive relationship, in which enhancements to information systems lead to higher levels of

organizational agility.

Regression analysis confirmed a statistically significant effect of the variable ($\beta = 0.147$, $t = 3.061$, $p = 0.02$). The overall significance of the regression model was corroborated by the calculated ($F = 9.371$, $p = 0.02$), with both p-values below the threshold of 0.05. Consequently, the main hypothesis was accepted.

Sub-Hypothesis Testing: The sub-hypotheses were tested using a simple linear regression analysis, and the results are detailed in Table 7.

Table 8: Results of the Effect of Information Systems Dimensions on Organizational Agility

Dependent Variable: Organizational Agility							
Model Summary			ANOVA Test Results		Regression Rate and Test Results (T)		
Independent Variable Dimensions	Correlation Coefficient R	Coefficient of Determination (R ²)	F-value	Sig.	Beta β	T-Value	Sig. Level
1- Hardware and Communication Networks	0.204	0.342	70.10	0.002	0.146	3.164	0.002
2- Software	0.209	0.144	10.514	0.001	0.146	3.23	0.001
3- Databases	0.163	0.227	6.274	0.000	0.108	2.505	0.000
4- Human Resources	0.224	0.150	12.202	0.001	0.147	3.493	0.001

Source: Prepared by researchers based on the results of the questionnaire analysis.

As shown in Table 8, the results of testing the first sub-hypothesis are as follows:

Sub-Hypothesis 1: The dimensions of hardware and communication networks have a statistically significant effect on organizational agility in the Social Fund for Development in Yemen.

The analysis revealed a positive and statistically significant correlation

between the hardware and communication network dimensions and organizational agility ($R = 0.204$). The coefficient of determination ($R^2 = 0.342$) indicates that this dimension explains 34.2% of the variance in organizational agility, reflecting the significance of the regression model. The regression coefficient ($\beta = 0.146$) confirmed a positive effect. This coefficient was statistically significant ($t = 3.164$, $p = 0.002$), a finding corroborated by the overall model's significance ($F = 70.010$, $p = 0.002$). The effect of this dimension was considered statistically significant when the p-value was less than 0.05. Therefore, the first sub-hypothesis is accepted.

Sub-Hypothesis 2: The Software dimension has a statistically significant effect on organizational agility in the Social Fund for Development in Yemen.

The analysis revealed a positive and statistically significant correlation between the software dimension and organizational agility ($R = 0.209$). The coefficient of determination ($R^2 = 0.144$) indicates that this dimension explains 14.4% of the variance in organizational agility, reflecting the significance of the regression model. The regression coefficient ($\beta = 0.146$) confirmed a positive effect. This coefficient was statistically significant ($t = 3.23$, $p = 0.001$), a finding corroborated by the overall model's significance ($F = 10.514$, $p = 0.001$). The effect of this dimension was considered statistically significant when the p-value was less than 0.05. Therefore, the second sub-hypothesis was accepted.

Sub-Hypothesis 3: The database dimension has a statistically significant effect on organizational agility at the Social Fund for Development in Yemen.

The analysis revealed a positive and statistically significant correlation between the database dimension and organizational agility ($R = 0.163$). The coefficient of determination ($R^2 = 0.227$) indicates that this dimension explains 22.7% of the variance in organizational agility, reflecting the significance of the regression model. The regression coefficient ($\beta = 0.108$) confirmed a positive effect. This coefficient was statistically significant ($t = 2.505$, $p < 0.001$), a finding corroborated by the overall model's significance ($F = 6.274$, $p < 0.001$). The effect of this dimension was considered statistically significant when the p-value was less than 0.05. Therefore, the third hypothesis is accepted.

Sub-Hypothesis 4: The Human Resources dimension has a statistically significant effect on organizational agility in the Social Fund for Development in Yemen.

The analysis revealed a positive and statistically significant correlation between the Human Resources dimension and organizational agility (R

= 0.224). The coefficient of determination ($R^2 = 0.150$) indicates that this dimension explains 15% of the variance in organizational agility, reflecting the significance of the regression model. The regression coefficient ($\beta = 0.147$) confirmed a positive effect. This coefficient was statistically significant ($t = 3.493$, $p = 0.001$), a finding corroborated by the overall model's significance ($F = 12.202$, $p = 0.001$). The effect of this dimension was considered statistically significant when the p-value was less than 0.05. Therefore, the fourth sub-hypothesis was accepted.

Conclusion

This study provides a scientific and practical contribution by exploring the effect of information systems on organizational agility at the Social Fund for Development in Yemen, an organization operating in an environment marked by rapid changes and complex challenges. The results confirm that information systems, across all their dimensions (Hardware and Communication Networks, Software, Databases, and Human Resources), have a positive and statistically significant effect on enhancing organizational agility in various dimensions (Sensing, Decision-Making, and Practice). Although information systems account for 13.9% of the variance in organizational agility, the remaining variance suggests that other factors also influence agility, opening avenues for future research.

Findings

The data analysis revealed several key findings, the most prominent of which are:

1. The utilization of all information system dimensions at the Social Fund for Development in Yemen was rated at a "High" level by participants. A slight variation in arithmetic means established a clear priority order, from highest to lowest: Hardware and Communication Networks, Software, Databases, and Human Resources.
2. The implementation of organizational agility was rated "High" across all dimensions at the Social Fund for Development, except Decision-Making Agility, which was rated "Medium." The priority ranking of the dimensions was sensing, practice, and decision-making agility.
3. At a general level, the results indicate a positive and statistically significant correlation between the independent variable (Information Systems) and the dependent variable (Organizational Agility). Information Systems were found to

explain 13.9% of the variance in organizational agility, signifying that they are influential factors. However, the results also show that more than 86% of the variance is attributed to other factors that may affect organizational agility in the Social Fund for Development in Yemen.

4. Specifically, the results confirmed a positive and statistically significant correlation between all information system dimensions (Hardware and Communication Networks, Software, Databases, and Human Resources) and organizational agility at the Social Fund for Development in Yemen.

Recommendations:

Based on the conclusions of this study, the following recommendations are proposed:

1. Continuously evaluate and update information systems to ensure the timely and effective delivery of information.
2. Pursue ongoing development and updating of employee hardware to keep pace with technological change.
3. Fully automate the fund's processes by leveraging the full capacity of its IT systems and digitizing all activities.
4. The Fund must prioritize organizational agility as an essential concept to be adopted by managers at all levels.
5. Future studies should explore the link between information systems and organizational agility in new contexts and incorporate additional dimensions.
6. Clearly define and delegate authority for each administrative level within the Fund.

Suggestions for Future Research: Based on the findings of this study, the following avenues for future research are proposed to deepen the understanding and expand the scope of inquiry.

1. Investigating Other Factors Influencing Organizational Agility: A potential study could be titled, "Analysis of Organizational and Leadership Factors Influencing Organizational Agility: A Case Study of the Social Fund for Development in Yemen."
2. Examining the Impact of Information System Quality: A study could explore the effect of information system quality on decision-making agility, with a proposed title: "The Relationship Between Information System Quality and Decision-Making Agility at the Social Fund for Development in Yemen."
3. Conducting a Comparative Analysis: A comparative study between international and local organizations is recommended,

with a potential title: "Organizational Agility Standards in International versus Local Organizations in Yemen: An Evaluative Study."

Ethical considerations

Ethical approval for this study was granted by the Inclusive Development Research Center at Sana'a University. Before data collection, all participants were informed of the research objectives and procedures, and their voluntary participation was confirmed through oral informed consent. To ensure participant anonymity and confidentiality, no personal data was collected.

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Data availability

The data supporting the findings of this study are available from the authors upon reasonable request.

Competing interest

The authors declare no competing interests.

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