

ARTICLE

Artificial intelligence's effect on internal
organizational processes: An analysis of food
wholesalers in the United Arab Emirates**Natali Turkmani¹, Tamadher Aldabbagh², Zainab Al Ghurabli², Siham Haider²,
Ahmad Aburayya^{3*} , and Abdelkarim Kitana²**¹Department of Marketing, College of Business, City University Ajman, Ajman, Ajman, United Arab Emirates²Department of Human Resource Management, College of Business, City University Ajman, Ajman, Ajman, United Arab Emirates³Department of Master of Business Administration, College of Business, City University Ajman, Ajman, Ajman, United Arab Emirates(This article belongs to the *Special Issue: Systematic Innovation and AI Integration*)**Abstract**

In recent years, artificial Intelligence (AI) has emerged as one of the main global trends in innovation and competition. Businesses have begun using AI to boost productivity, reduce costs, and improve strategic decisions. This research examines how AI affects internal organizational processes (IOP) by examining the food wholesalers industry in the United Arab Emirates (UAE). A quantitative research design was used, and the data were collected via an online survey administered via Google Forms, with 218 wholesalers in the UAE participating. SPSS 26 was used to analyze the data using descriptive statistics, correlation analysis, and multiple regression. The findings indicated that AI had a significant effect on the IOP. The greatest impact was demonstrated by AI infrastructure, followed by employee readiness and leadership support. The research concludes that enhancing IOP requires a combined strategy that includes technological preparedness, the role of leaders, data quality, and staff competence. It provides recommendations, limitations, and future research directions to guide the organization and researchers in their future research on the drivers of internal process improvement.

Keywords: Artificial intelligence, Internal organizational processes, Process efficiency, Data quality, Food wholesalers sector

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[https://doi.org/10.6977/IJoSI.202606_10\(3\).0005](https://doi.org/10.6977/IJoSI.202606_10(3).0005)**Received:** April 13, 2026**Revised:** May 12, 2026**Accepted:** May 25, 2026**Published online:** June 19, 2026**Copyright:** © 2026 Author(s). This is an Open-Access article distributed under the terms of the Creative Commons Attribution License, permitting distribution, and reproduction in any medium, provided the original work is properly cited.**Publisher's Note:** AccScience Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.**1. Introduction**

Artificial intelligence (AI) has become one of the new trends in innovation and competitiveness in the world in recent years. Companies have started turning to AI to improve efficiency, cost-effectiveness, and strategic decision-making (Ali *et al.*, 2024; Alshamsi *et al.*, 2024; Hassan *et al.*, 2024). Increased automation, real-time data analysis, and greater task accuracy have become new features of internal processes, facilitated by AI technologies such as machine learning, predictive analytics, and natural language

processing (Atienza-Barba *et al.*, 2024; Khanfar *et al.*, 2026). In the modern business world, organizations that successfully adopt AI into their internal processes would benefit a lot in terms of productivity and flexibility, which play a role in enhancing the overall performance of the company (Almaiah *et al.*, 2022; Almutawa & Dilawer, 2023; Qatanani *et al.*, 2026; Singh & Shaurya, 2021).

The United Arab Emirates (UAE) has established itself as one of the nations at the forefront of AI development, with the UAE National Artificial Intelligence Strategy 2031 striving to transform the country into an international center of AI growth (Dafri, 2023; Felemban *et al.*, 2024). Organizations in the UAE, both governmental and non-governmental, have turned to AI to optimize resource distribution, streamline operations, and improve the efficiency of service delivery (Alshamsi *et al.*, 2024; Hassan *et al.*, 2024). The administrative operations of Dubai have been automated through AI-driven solutions in government agencies, including the Roads and Transport Authority and the Dubai Electricity and Water Authority, to enhance the efficiency of business operations (Ali, 2024; Radwan *et al.*, 2026). It is a national initiative that can be seen as the larger vision of the UAE to establish a knowledge-based economy driven by digital transformation and intelligent networks (Hirzallah & Alshurideh, 2023).

In the companies and marketing sectors, AI has emerged as the key facilitator of organizational roles and customer interactions. In marketing, AI contributes to data-driven decision-making, predictive analysis, and the customization of campaigns, thereby enhancing the external performance of results and the procedures that underlie them (Ali *et al.*, 2024; Mahade *et al.*, 2025). Chatbots and recommendation engines are examples of AI tools used by marketing departments to automate customer relationships and, at the same time, collect useful behavioral data. In addition, AI analytics platforms are gradually relieving the manual effort in internal marketing operations, such as market research, brand surveillance, and decision-making, and enhancing the accuracy of generated data (Almutawa & Dilawer, 2023). As a result, the use of AI in marketing not only improves the customer experience but also increases the efficiency of marketing teams (Atienza-Barba *et al.*, 2024; Felemban *et al.*, 2024; Qatanani *et al.*, 2026).

Prior studies have focused on the extrinsic advantages of AI, such as customer satisfaction and marketing outcomes, whereas little attention has been paid to internal organizational consequences. This is a vital gap in research because internal processes are the basis for an organization's long-term productivity and strategic resiliency. To optimize the usefulness of AI in a UAE setting, it is crucial

to understand how it can influence internal processes, including automation, interdepartmental relationships, and the quality of decisions. Consequently, this study examines the effect of AI adoption on internal organizational processes (IOP) in UAE-based wholesalers. This research contributes to the field of digital transformation and offers valuable data for UAE organizations seeking to harmonize AI strategies with greater operational effectiveness. Although the overall advantages of AI are widely discussed, empirical research examining its impact on the inner mechanisms of organizations in the UAE is scarce (Alshamsi *et al.*, 2024). A large portion of the extant literature examines the performance of customer service, marketing, and even external aspects of innovation, rather than what should be occurring internally, since its success leads to organizational success (Alsharhan *et al.*, 2022).

2. Literature review

The fact that AI directly affects the productivity of an organization has been verified by numerous studies through the automation of repetitive operations and the enhancement of efficiency. Alshamsi *et al.* (2024) discovered that, in the UAE energy industry, AI applications for customer relationship management and information systems increased agility and overall performance to a greater extent. On the same note, Ali *et al.* (2024) pointed out that AI systems enhanced the capacity of innovation, thus making organizations keep up with evolving market conditions. Hassan *et al.* (2024) introduced an AI model that predicts excellence in organizations, with a high-level correlation between AI-based evaluation systems and better working outcomes. Such results indicate that AI is an enabler of strategic agility and sustainable competitiveness. These empirical data reveal a statistically significant role for AI implementation across different levels of organizational performance.

Aspects of workflow management, communication, decision-making systems, and knowledge sharing in the organization are increasingly influenced by AI technologies. AI automates complex data processing, detects failures, and helps managers coordinate internally. As demonstrated by Singh and Shaurya (2021), the implementation of AI in business functions enhanced employee performance evaluation and reduced delays in administration, confirming that AI can indeed speed up and improve the accuracy of internal decision-making. Similarly, Mahade *et al.* (2025) demonstrated that AI-based analytics promoted sustainability by optimizing personnel distribution and reducing workload. Empirical research shows that AI implementation increases measurable outcomes such as task efficiency, coordination speed, and decision-making accuracy. Such results show that statistically, AI has a

positive impact on IOP and performance outcomes.

The UAE is characterized by active state efforts helping to implement AI, including the UAE National Artificial Intelligence Strategy 2031 (Dafri, 2023; Felemban *et al.*, 2024). AI has been adopted by public agencies and private companies to improve their productivity, reduce human error, and facilitate innovation (Alshamsi *et al.*, 2024; Khalil & Al-Ali, 2025). Elsewhere in the communication industry, Radwan *et al.* (2026) documented that AI enhanced data processing, media coverage, and in-company communication. The same has been observed in government communication offices by Khalil and Al-Ali (2025), who found that AI-assisted data analytics simplified reporting and increased the timeliness of decision-making. Additionally, Hirzallah and Alshurideh (2023) reported that internal and external preparedness, infrastructure, management support, and employee capabilities were critical to the success of AI implementation in Emirati organizations. Together, these quantitative results present a strong empirical base for assessing the effects of AI on IOP in the UAE. Overall, existing quantitative studies validate the significant impact of AI on organizational performance, particularly in efficiency, agility, and decision quality. Nevertheless, there is a lack of empirical data on the impact of AI on IOP in the UAE. This disconnect warrants the present study, which quantitatively measures variables related to AI implementation and its mediating organizational factors, as well as internal process outcomes, using hypothesis-driven statistical analysis.

Previous studies have mostly focused on specific applications of AI in fields such as manufacturing, marketing, and customer service (Ekechi *et al.*, 2024; Huang & Rust, 2024; Jarek & Grzegorz, 2019; Sikka *et al.*, 2022; Van Esch & Black, 2021). These studies have demonstrated how AI can increase the efficacy and efficiency of outward-facing processes. Nevertheless, there are few thorough studies on the use of AI in IOP, which are essential for sustaining a company's internal operations and, tangentially, for achieving overall economic objectives (Cavallotto, 2023; Ruvolo, 2024). Business process improvement initiatives are vulnerable to failure due to poor communication and a lack of support from managers and employees. Furthermore, the high failure rate of these projects indicates a need for improved integration and comprehension of AI technologies within these frameworks, although many approaches and tools, such as Business Process Reengineering and Lean Six Sigma, have been proposed and implemented for process improvement. The literature on the practical use of AI in IOP optimization is limited, despite the potential advantages. The majority of current research focuses on integrating AI into external-

facing processes rather than on comprehensive integration into internal processes. This research attempts to close this gap by investigating the viability of AI-enabled process improvement tools to help companies maximize their IOP. The novelty lies in its focus on the real-world use of AI in IOP optimization, an area that has received little attention in earlier research. This study aims to offer useful insights for businesses seeking to use AI for process improvement and ultimately improve their business performance by examining the present level of AI adoption in internal processes and identifying the elements that determine its effectiveness.

To better understand the importance of an organization's strategic capabilities and their impact on internal performance, the Dynamic Capabilities View (DCV) theory has attracted significant scholarly interest. It helps explain the differences in business performance within a specific industry while providing businesses with the best opportunity to grow and maximize their resources (Liu *et al.*, 2013; Schilke *et al.*, 2018). The DCV places a high priority on preserving and expanding the outstanding operational competencies needed to execute and coordinate operational procedures. It is based on the idea that a company's current positions, resources, and operational capabilities can be altered by dynamic capabilities, creating new opportunities for the best use of its strategic assets (Schilke *et al.*, 2018). Furthermore, to drive innovation that adapts to new business conditions, the DCV clarifies the integration and reconfiguration of internal and external skills. This is not unexpected, as earlier research has used DCV to understand information technology (IT)-related competencies and organization-level outcomes (Aker *et al.*, 2023; Li *et al.*, 2020; Mandal, 2019). Surprisingly, it was found that dynamic capabilities have a positive impact on organizations' internal performance before and during COVID-19. Although developing markets have unique resources and capacities within their sociocultural and economic environments, the idea has been explored more thoroughly in industrialized nations.

Organizational information processing theory (OIPT) states that companies with strong information collection, analysis, and use skills can anticipate changes and even proactively adjust to mitigate uncertainty, thereby building organizational resilience, as complexity and uncertainty are inherent in today's business environment. According to OIPT, companies must employ two performance-enhancing strategies to deal with changes in the business environment: (i) gather more high-quality data, and (ii) work harder to enhance information processing skills (Fan *et al.*, 2017; Srinivasan & Swink, 2015). Therefore, OIPT offers a comprehensive theoretical basis for constructing

an organizational resilience research framework by proposing that organizational resilience capacity depends on firms' ability to obtain resources and the degree to which they can process those resources. To obtain more high-quality information, we advise businesses to fully utilize information, knowledge, employees' experiences and readiness, and other resources that are efficiently and effectively transferred through business networks to enhance IOP (König *et al.*, 2018). This is strategically crucial for organizations to swiftly recover from catastrophic events, as discussed in the OIPT literature. A growing corpus of research has acknowledged the significance of ambidextrous learning in absorbing information that can be used to address difficulties by enhancing resource utilization and expanding resource pools, after March's (1991) groundbreaking work on ambidextrous learning. Therefore, we believe that these theoretical frameworks (DCV and OIPT) are suitable for our research, particularly on organizational agility, data quality, readiness, top management commitment, and AI integration, to develop our theoretical model from the standpoint of developing economies.

Research has shown that organizational agility is critical to improving IOP, particularly in dynamic contexts. For instance, a meta-analysis of 249 empirical studies found that an organization's high level of agility is consistently linked to favorable performance outcomes; in other words, agile capabilities enable an organization to better adapt its workflow and decision-making processes (Nguyen *et al.*, 2025). According to research on public services in the UAE, there is a positive correlation between organizational agility and performance, driven by innovation (Almazrouei *et al.*, 2024). As a result, agility improves internal capabilities and departmental coordination. When combined, these findings show that an organization's internal operations—such as workflow effectiveness, decision-making timeliness, and cross-functional coordination—are improved when it develops agility, which includes flexible structures, a quick response mechanism, and agile leadership. Employee willingness is one of the most important predictors of the success of AI-enabled internal procedures. Employees with the requisite digital skills, a positive attitude toward change, and trust in technology enable companies to achieve process efficiency and ease the introduction of changes. One study on technology adoption in the UAE revealed that the willingness of employees is the key factor in determining the efficiency of automation systems and data-driven decision-making (Mustapha, 2022). Likewise, as noted by Khanfar *et al.* (2026), employees who are ready to move forward hasten AI integration by reducing resistance and enhancing communication within operations. Correspondingly, collaboration and task

coordination, which are essential internal processes, are improved by training and psychological readiness.

Data quality determines how well the AI-based IOP works. When businesses have access to precise, logical, and easily accessible data, they may make more dependable decisions and enhance departmental collaboration (Felemban *et al.*, 2024). Effective data management enhances decision-making agility and speed, while inefficient data governance decreases knowledge sharing and negatively impacts process efficiency, according to research on UAE-based companies (Atienza-Barba *et al.*, 2024; Hassan *et al.*, 2024). AI systems may anticipate operational bottlenecks and enhance workflows by utilizing high-quality, well-structured data, thereby increasing organizational responsiveness, according to Mahade *et al.* (2025). The quality of the data will therefore be closely linked to improvements in process performance and strategic alignment. Whether the success of AI initiatives will be reflected in the company's enhanced processes depends critically on the leadership's backing. Leaders who encourage the use of AI may motivate staff, foster an innovative culture, and ensure that resource allocation aligns with the digital transition. According to research on UAE-based companies, leadership involvement increases employee trust and readiness to embrace new technologies that improve communication between the company and its workers and overall coordination (Felemban *et al.*, 2024; Radwan *et al.*, 2026). According to Alshamsi *et al.* (2024), leadership commitment enhances the benefits of businesses that employ AI systems by moderating the relationship between technology investment and performance outcomes. Similarly, Khalil and Al-Ali (2025) found that encouraging leadership speeds up departmental adoption of digital workflows. Effective implementation of AI and optimization of internal processes are based on a strong IT infrastructure. Research indicates that companies that have properly established technological resources have the advantages of processing data more quickly, integrating workflows more conveniently, and achieving higher efficiency (Atienza-Barba *et al.*, 2024). Almutawa and Dilawer (2023) found that the ability of businesses to integrate AI technologies into their everyday operations is directly affected by IT infrastructure readiness in the UAE. Stable hardware, software, and networks enhance the automation process and reduce time wasted during the procedure, especially in the public sector, as noted by Alshamsi *et al.* (2024) and Hassan *et al.* (2024). Furthermore, according to Hirzallah and Alshurideh (2023), infrastructural capabilities mitigate the impact of AI on performance by fostering interdepartmental collaboration and complementary information exchange.

In conclusion, the literature review shows that many businesses are in different phases of incorporating AI into their internal processes, despite initial enthusiasm and adoption. This aligns with the high rates of AI project success documented in the literature. It further shows that a lack of knowledge and inadequate managerial support are impeding the integration of AI into IOP, underscoring the need for targeted education and strategic alignment. With varying degrees of AI engagement, every company surveyed uses cutting-edge collaboration and communication analytics technology. This includes more sophisticated applications such as predictive analytics and customer behavior analysis, as well as AI for task automation. Because it streamlines repetitive operations, increases operational efficiency, and lowers costs, business process automation is essential to modern enterprises. AI has greatly improved traditional methods for automating business processes, which mostly depended on rule-based systems. AI technologies, such as robotic process automation, machine learning, and natural language processing, have completely transformed businesses'

approaches to process automation. These developments have led to more efficient workflows by expanding the breadth of automation, enhancing decision-making skills, and lowering human intervention. Based on the above discussions, the study formulated the following hypotheses (H; Figure 1):

- H1: AI infrastructure has a positive impact on IOP.
- H2: Leadership support has a positive impact on IOP.
- H3: Organizational agility has a positive impact on IOP.
- H4: Employee readiness has a positive impact on IOP.
- H5: Data quality has a positive impact on IOP.

3. Methodology

We used a quantitative, cross-sectional survey design to determine the effects of organizational agility, employee preparedness, data quality, leadership support, and AI infrastructure on IOP. A quantitative study enables the researcher to test hypotheses numerically and examine

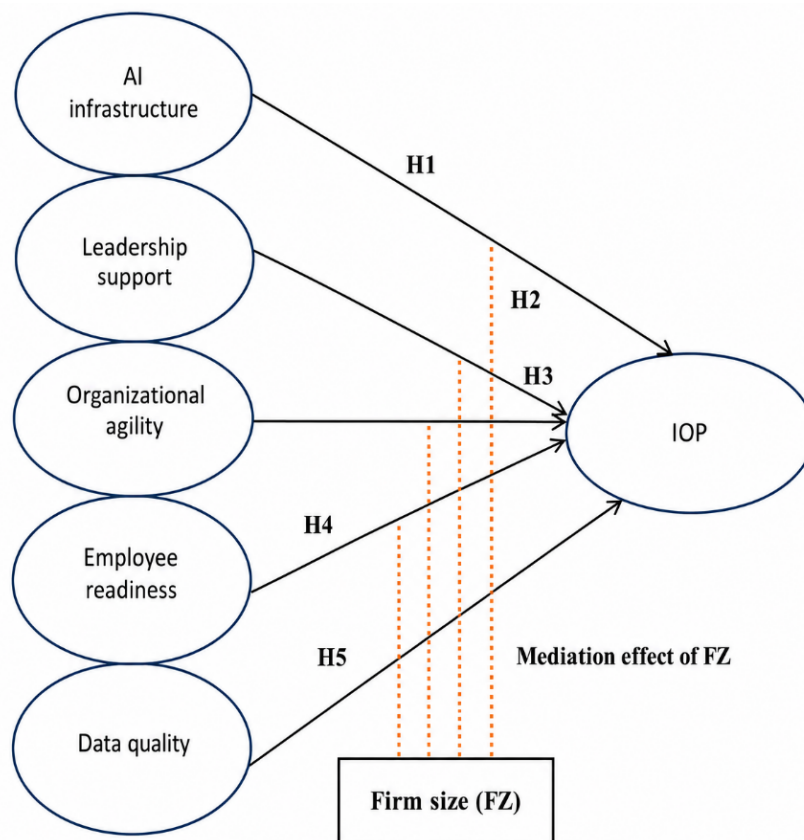


Figure 1. The theoretical model of the study
Abbreviations: AI: Artificial intelligence; H: Hypothesis; IOP: Internal organizational processes.

relationships between variables using statistical tools (Sekaran & Bougie, 2016). The cross-sectional design is appropriate for gathering information at a single point in time and is widely used in organizational and technology-adoption research (Alnajdawi *et al.*, 2025; Creswell & Creswell, 2023; Gupta *et al.*, 2024).

The target population consisted of wholesalers in the UAE. A total of 218 valid responses were collected and used in the analysis. According to Hair *et al.* (2019), this sample size is adequate for conducting regression analysis, reliability testing, and other multivariate statistical procedures. Convenience sampling was used because it is convenient and time-efficient. Since the demographic entities in the sample were unknown, non-probability sampling was used as it was not possible to obtain sampling frames from those wholesalers. According to Malhotra *et al.* (2006), non-probability sampling has been widely used for employee, customer, and industrial surveys in developing countries and is simple for researchers to administer, despite two main drawbacks: reduced accuracy due to selection bias and limited generalizability of the results. Convenience sampling provides easy access to a large enough sample and is considered the least expensive and time-consuming sampling method (Easterby-Smith *et al.*, 2012; Malhotra *et al.*, 2006). Additionally, because it is “well-convenient,” it is frequently used in research (Malhotra *et al.*, 2006). Convenience sampling was thus employed as a sample strategy in this study.

Data collection was conducted via an online questionnaire in Google Forms. The survey link was sent via the Internet to employees at various UAE-based wholesale businesses. The purpose of the research was explained to the participants, as was the anonymity of responses and the voluntary nature of participation. Data were collected, and once collection was complete, the responses were exported to SPSS (31; IBM, United States) for cleaning, coding, and statistical analysis. The questionnaire consisted of closed-ended items adapted from previously validated studies. All variables in this study were measured on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

In business and service research, a self-administered questionnaire is a popular method for gathering data. In questionnaire-based research, the variables of interest are operationalized through a set of questions that form an existing or newly created scale. Surveys are among the most widely used techniques in the social sciences, but they also carry the risk of frequent procedural bias and variation, which can compromise the validity and reliability of empirical findings. The gathered data were tested for common method bias (CMB) using Harman’s single-factor

with the study’s measurement scales. According to the test, the newly developed factor accounted for 37.54% of the variance, which is below the 50% threshold suggested by Podsakoff *et al.* (2003). Therefore, the data did not have any CMB problems.

4. Results

4.1. Demographic profile of respondents

A total of 218 workers from various food supply companies in the UAE made up the sample. According to the gender breakdown, 45.9% of respondents were women and 54.1% were men. In terms of age, the majority of them (43.6%) were above 55, indicating they were primarily seasoned professionals. The educational attainment was 15.1% with a diploma, 21.6% with a PhD, 27.1% with a bachelor’s degree, and 36.2% with a master’s degree. In terms of occupational grades, 39.0% were managers, 28.0% were supervisors, 19.7% were executives, and 13.3% were staff. Meanwhile, 37.2% of respondents reported 4–7 years of experience, 28.0% reported 1–3 years, 22.9% reported 8 years or more, and 11.9% reported less than a year. In terms of firm size, 13.6% of respondents were from small firms with less than 20 employees, 35.7% from medium firms, and the majority (50.7%) from large firms.

4.2. Reliability and validity analysis

Internal consistency (Cronbach’s alpha) was computed for each construct in this study. Every scale attained the widely recognized threshold ($\alpha \geq 0.70$), ensuring that the items accurately measure the target constructs. The items were examined by specialists during the instrument development process and were sufficiently tailored to several current studies, resulting in favorable content validity (Sekaran & Bougie, 2016). Subsequently, exploratory factor analyses confirmed validity. The results showed that items loaded above 0.50 based on the construct in question. In addition, the items for each construct yielded a factor greater than 1. Therefore, the instrument used in this study is reliable and valid for conducting hypothesis testing. Average variance extracted (AVE) was used to further evaluate each measurement’s convergent validity. The AVE values ranged from 0.721 to 0.889, higher than the 0.5 cutoff (Table 1). The factor loading values were higher than the threshold of 0.7. Additionally, convergent validity was confirmed by these findings.

4.3. Correlation analysis

Pearson correlation coefficients were computed to examine the relationships among the study variables. IOP showed strong positive and statistically significant correlations with AI infrastructure ($r = 0.917$, $p < 0.01$) and leadership

Table 1. Cronbach's alpha and constructs analysis

Variable	Item	Cronbach's alpha	Factor loading	AVE
Organizational agility	1. My organization tends to adapt its processes fast with changes. 2. The teams will be able to adjust the procedures as soon as new priorities occur. 3. The organization allocates resources very quickly to respond to urgent needs.	0.871	0.732; 0.805; 0.853	0.796
Employee readiness	1. Employees receive sufficient training to use AI tools effectively. 2. Staff are willing to adopt new AI technologies. 3. Employees have the necessary digital skills to work with AI systems.	0.840	0.886; 0.855; 0.871	0.870
Data quality	1. The data used by our AI systems is accurate and reliable. 2. Our systems have regular and consistent updates of data across departments. 3. Good quality data assists AI in giving useful and reliable results.	0.889	0.821; 0.957; 0.934	0.804
Leadership support	1. Top management is actively involved in the support of AI-related projects. 2. Leaders express a visionary message of using AI. 3. The management invests enough resources in AI projects.	0.747	0.854; 0.853; 0.733	0.721
AI infrastructure	1. Our IT systems are capable of supporting AI tools. 2. The IT team provides timely technical support for AI applications. 3. Network and storage capacity are sufficient for AI-related systems.	0.866	0.910; 0.863; 0.894	0.889

Abbreviations: AI: Artificial intelligence; AVE: Average variance extracted; IT: Information technology.

support ($r = 0.690, p < 0.01$). These results indicate that improvements in technological readiness and leadership engagement are associated with better internal processes. Employee readiness showed a significant positive relationship with agility ($r = 0.895, p < 0.01$), indicating that more agile and flexible organizations are better prepared and able to support their employees. Moderate positive relationships were also found between leadership support and AI infrastructure ($r = 0.714, p < 0.01$) and between leadership support and data quality ($r = 0.204, p < 0.01$), suggesting that the organization's readiness factors are interconnected. The overall pattern of interrelationships between the constructs was positive. This proves that the variables overlap conceptually, consistent with the theory of organizational readiness (Hair *et al.*, 2019). Correlation analysis provides a first hint of these associations, while

the regression analysis was used to estimate the unique predictive value of each variable.

4.4. Regression analysis

The effects of agility, employee readiness, data quality, leadership support, and AI infrastructure on IOP were examined using a multiple linear regression (enter technique). The study's model was validated using multiple regression, and the model was significant ($F = 244.874; p < 0.001$; Table 2); it suggests that the independent variables accounted for 85.2% of the variation in IOP. Therefore, a level of predictive ability high enough to be regarded as powerful for intraorganizational and operational research depends on the relative predictive strength of agility, employee readiness, data quality, leadership support, and AI infrastructure.

Table 2. Multiple regression analysis

Model summary					ANOVA					
Model	R	R ²	Adjusted R ²	Standard error of the estimate	Model	Sum of Squares	df	Mean Square	F	p-value
1	0.923	0.852	0.849	0.21943	Regression	58.951	5	11.790	244.874	<0.001
					Residual	10.207	212	0.048		
					Total	69.159	217			

Abbreviation: df: Degree of freedom.

The most powerful predictor of IOP was AI infrastructure ($\beta = 0.870, p < 0.001$), indicating that the positive contribution of technological infrastructure to IOP is significant and robust when other factors are held constant. Leadership support also had a positive effect, though to a lesser extent ($\beta = 0.190, p = 0.020$), implying that supportive leadership is a significant force in enabling IOP improvement. Employee readiness also showed a significant positive influence ($\beta = 0.145, p = 0.016$), supporting the notion that when employees are ready, qualified, and self-confident, IOP works more successfully. Interestingly, as shown in Figure 2, both agility and data quality portrayed significant negative coefficients in the regression model ($\beta = -0.151, p = 0.012$; $\beta = -0.079, p = 0.004$, respectively).

The bivariate correlations between organizational agility/data quality and IOP were positive, suggesting that they are useful variables in practice. The negative coefficients in the multivariate model can be attributed to multicollinearity and overlapping of shared variance among predictors with high correlations, especially AI infrastructure and employee readiness. Thus, such negative indicators cannot be viewed as indications that agility or data quality decreases IOP performance. Rather, they reflect statistical suppression effects arising from highly correlated predictors. In fact, Section 4.3 has demonstrated that the independent variables are correlated. As a result, multicollinearity among the independent variables is anticipated. Pearson's correlation coefficients between the AI elements in this study ranged from 0.204 to 0.895. This outcome was anticipated since food suppliers with advanced AI practices typically have more advanced technological practices overall. According to Hair *et al.* (2019), several techniques are available for evaluating multicollinearity, including the variance inflation factor (VIF) and tolerance values. They stated that multicollinearity is an issue if the tolerance is less than 0.1 and the VIF is greater than 10.

The tolerances in our study showed no values below the minimum level of 0.1 (0.106–0.427), while the VIF showed no values above the well-recognized maximum level of 10 (3.213–7.531; Table 3). There is no indication that multicollinearity issues could arise from the results of the earlier experiments, as well as from the VIF and tolerance values.

4.5. The impact of firm size on artificial intelligence enablers

To determine whether there are significant differences in the extent of AI enablers across small, medium, and large food suppliers, this section presents additional statistical tests in general and significance tests, in particular, after analyzing the effect of AI on IOP, using the *t*-test. The statistical results for each AI component and the total number of AI enablers across small, medium, and large businesses are presented in Table 4. No significant difference was observed in the means or overall levels of AI enablers across small, medium, and large firms. Additionally, the mean across all AI enablers in large organizations was marginally greater than the means across all AI enablers in medium and small firms.

5. Discussion

This study aimed to examine the effect of AI adoption on IOP within UAE-based wholesalers. The strongest predictor of the model was AI infrastructure. This demonstrates that companies with well-developed technological foundations—such as integrated systems, reliable networks, and modern hardware—are better equipped to optimize internal processes. This outcome is in line with the findings of Davenport and Ronanki (2018), who noted that technological capability plays a major role in digital transformation. Strong AI infrastructure will be essential to enable automation, data transfer, and intersystem compatibility in the UAE, as both the government and

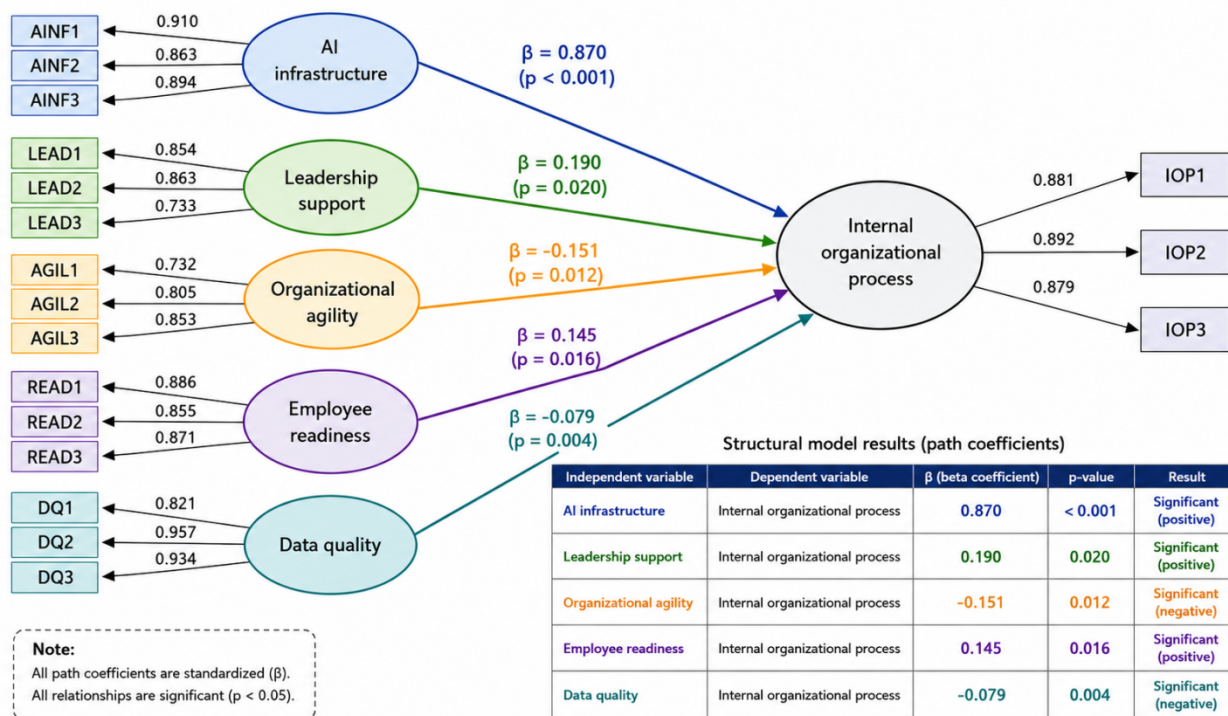


Figure 2. Measurement and structural model analysis
Abbreviations: AGIL: Agility; AI: Artificial intelligence; AINF: AI infrastructure; DQ: Data quality; IOP: Internal organizational processes; LEAD: Leadership; READ: Employee readiness.

Table 3. Regression coefficients analysis

Model 1	Unstandardized coefficients (B)	Standard error	Standardized coefficients (β)	t	p-value	Collinearity statistics	
						Tolerance	VIF
Constant	0.555	0.207	-	2.674	0.008	-	-
AII	0.866	0.038	0.870	23.016	<0.001	0.427	3.213
LS	0.197	0.041	0.190	2.350	0.020	0.315	3.327
AG	-0.142	0.056	-0.151	-2.534	0.012	0.146	6.782
ER	0.136	0.056	0.145	2.420	0.016	0.106	7.531
DQ	-0.077	0.027	-0.079	-2.901	0.004	0.243	5.466

Note: Internal organizational process is the dependent variable
Abbreviations: AG: Agility; AII: Artificial intelligence infrastructure; DQ: Data quality; ER: Employee readiness; LS: Leadership support; VIF: Variance inflation factor.

businesses are rapidly moving toward the adoption of AI. As a result, employees will have simple processes, waste less time, and experience fewer operational errors. The AI-based enhancement has the largest marginal increase in internal process performance, as indicated by the high β level.

Internal organizational processes showed a strong,

favorable correlation with leadership support and a further positive impact. In fact, its significance underscores the crucial role leaders play in driving change in organizations. According to Kotter (2012), resolute leaders influence culture, allocate resources, and assess employees' readiness to adopt new technology. In a similar vein, Venkatesh *et al.* (2003) highlighted how leadership may reduce employee

Table 4. AI enablers amongst small, medium, and large food wholesalers

AI enablers	Small firm	Medium firm	Large firm	<i>t</i>	<i>p</i> -value	Results
AG	4.223	4.261	4.287	1.678	0.501	Not Sig.
ER	4.382	4.362	4.214	0.221	0.522	Not Sig.
DQ	4.345	4.258	4.388	0.862	0.443	Not Sig.
LS	3.318	3.484	3.596	-2.017	0.755	Not Sig.
AII	4.395	4.379	4.401	2.561	0.267	Not Sig.
Overall AI enablers	4.366	4.297	4.388	0.752	0.422	Not Sig.

Abbreviations: AG: Agility; AI: Artificial intelligence; AII: AI infrastructure; DQ: Data quality; ER: Employee readiness; LS: Leadership support; Sig.: Significant.

uncertainty during a technology shift. The leadership vision is a key component of the UAE's strategic plan for digital transformation, and many organizations fund leadership development initiatives. Leaders provide the conditions for IOP to grow and improve when they encourage staff, clarify objectives, and support technological efforts. This supports the notion that effective leadership serves as a catalyst that facilitates the other variables in the organization, such as readiness and IT infrastructure, to play full roles in improving processes. In essence, leaders who encourage the use of AI may motivate staff, foster an innovative culture, and ensure that resource allocation aligns with the digital transition. This outcome is in line with the findings of Alshamsi *et al.* (2024)—leadership commitment enhances the advantages of the business employing AI systems by moderating the relationship between technology investment and performance outcomes. Similarly, Khalil and Al-Ali (2025) found that encouraging leadership speeds up departmental adoption of digital workflows.

The employee readiness variable is also a significant positive predictor, supporting the notion that when employees are ready, qualified, and self-confident, the IOP works more successfully. This implies that employees with the required skills, confidence, and motivation to work with technology can perform their tasks more efficiently. These results are supported by Venkatesh *et al.* (2003), who argued that readiness affects perceived ease of use and actual use of technology. Well-prepared employees are crucial to transforming IOP in the UAE, which is seeing more and more organizations adopt digital tools (UAE AI Strategy 2031). Technologically capable employees help in facilitating the transition of the workflow, the diminution

of resistance to change, and the enhancement of task accuracy. The favorable β indicates that the improvement of employee preparation, not only by training but also by awareness and participation, results in greater internal performance. In fact, employees with the requisite digital skills, a positive attitude toward change, and trust in technology enable companies to attain process efficiency and ease of adoption for the introduced changes. One study on technology adoption in the UAE revealed that the willingness of employees is the key factor in determining the efficiency of automation systems and data-driven decision-making (Mustapha, 2022).

Likewise, the findings are further supported by Khanfar *et al.* (2026), who concluded that employees who are ready hasten the process of AI integration due to reduced resistance and enhanced communication within operations.

The agility and data quality exhibited poor but statistically significant signals, according to the multivariate model. Agile businesses are better able to adapt to changing customer demands, technological breakthroughs, and environmental risks, as evidenced by Hair *et al.* (2019). The data quality effect has a negative value because it differs significantly from the AI infrastructure and leadership support. The coefficients in a regression model frequently change direction when tightly related factors compete (Tabachnick & Fidell, 2019). In theory, employing high-quality data can increase productivity, decrease errors, and enhance decision-making (Redman, 1998). Therefore, companies with strong data management practices are still better positioned to achieve successful internal operations. In essence, these results are not in line

with the current literature. Data quality determines how well AI-based internal processes work. When businesses have access to precise, logical, and easily accessible data, they may make more reliable decisions and enhance departmental collaboration (Felemban *et al.*, 2024). Effective data management enhances decision-making agility and speed, while inefficient data governance decreases knowledge sharing and negatively affects process efficiency, according to research on UAE-based companies (Atienza-Barba *et al.*, 2024; Hassan *et al.*, 2024). AI systems may anticipate operational bottlenecks and enhance workflows by utilizing high-quality, well-structured data, increasing organizational responsiveness (Mahade *et al.*, 2025). Data quality is therefore closely related to improving process performance and strategic alignment. Whether the success of AI initiatives will be reflected in the company's enhanced processes depends critically on the leadership's backing. Organizational agility is essential for enhancing IOP, especially in dynamic environments, according to research. An organization's high level of agility, for example, is consistently associated with positive performance outcomes, according to a meta-analysis of 249 empirical studies (Nguyen *et al.*, 2025); in other words, agile capabilities allow an organization to better adapt its workflow and decision-making processes. Innovation-driven organizational agility and performance are positively correlated, according to research on public services in the UAE (Almazrouei *et al.*, 2024). Consequently, agility enhances departmental coordination and internal capabilities. When combined, these findings show that an organization's internal operations—such as workflow effectiveness, decision-making timeliness, and cross-functional coordination—are improved when it develops agility, which includes flexible structures, a quick response mechanism, and agile leadership.

5.1. Research implications

This study contributes empirical data to both academic and managerial knowledge on numerous sides. Our findings contribute to the body of prior research by expanding our knowledge of how AI enhances IOP. This work addresses the dearth of research on the effect of AI on IOP from an information-processing perspective. Businesses' information-processing efficiency can be enhanced via AI integration, employee readiness, leadership support, and automated decision-making. Using the theoretical framework provided by OIPT and DCV, we suggest that AI can effectively improve IOP. We also incorporated the firm size as a mediating variable in our theoretical model. Our empirical experiments, which expand our theoretical understanding of AI research, validate this assertion. This study is unique because it methodically measures the

effect of AI integration on IOP for UAE food suppliers, potentially improving the application of AI in the UAE food supplier sector. As a result, the study expands the area of AI and IOP research.

This study examined aspects of AI and IOP in the food provider sector in a developing economy using current models. Research on AI has been more prevalent in the manufacturing industry than in the food sector, especially in some developing nations. By investigating the roles of AI infrastructure, employee readiness, and leadership support, this study provides deeper insights into the organizational factors that shape process effectiveness and operational performance. In particular, this study shows that the relationship between IOP and AI implementation is affected by firm size, offering evidence for a contextual factor that has received limited attention in prior research. The current study is the first to examine how IOP and the communication-based approach based on firm size interact with wholesalers' practitioners in the UAE. Additionally, the paradigm of the study provides a basis for further research across other sectors, such as finance, hospitality, and education.

For food supplier managers and senior executives looking to use AI to improve their business processes, our empirical findings offer important and useful insights. First, we argue that AI integration, employee readiness, data quality, agility, and leadership support should be prioritized for enhancing IOP and advancing the use of AI in food supply industries. AI should be seen by managers as a major factor in creating business processes and as an efficiency tool. Managers should strategically use AI technologies in risk management, decision analysis, and process optimization, drawing on skills in autonomous learning, predictive analytics, and other areas. This strategy can improve the firm's resilience to shocks and ongoing operational optimization. Second, managers should place a high priority on strengthening cooperative ties with wholesalers' partners, as this greatly enhances the efficacy of AI systems. AI's application in operations and production does not guarantee that it can perform all decision-making duties on its own. Notably, obtaining important and timely information requires tight engagement with partners. In addition to providing more real-time, actionable data that significantly improves the output quality of AI, improved collaboration also enhances the collaborative process itself, allowing businesses to manage partner relationships more accurately and efficiently. Lastly, businesses should refrain from making rash investments in AI technology, even though using it to improve corporate capabilities would yield major advantages. Companies must assess their own AI infrastructure, in addition to analyzing costs

and advantages, because this crucial component affects AI's efficacy and ability to improve firms' performance. Managers must assess the company's degree of digital maturity before implementing significant AI integration. This entails determining whether there is sufficient readily available data, IT infrastructure, complementary technologies, and pertinent skill pools to ensure the model produces high-quality results and that quality will persist.

5.2. Limitations and future research

The limitations of the study are acknowledged in this section. The following constraints may limit the applicability of the findings. This study was restricted to the UAE due to time and resource constraints. To generalize the results to other settings and circumstances, more empirical analysis is required. Furthermore, only food retailers in the UAE provided the data utilized in this study to evaluate the theoretical model, which limits the extent to which the findings can be applied. Perhaps different findings would have been obtained if the investigation had been carried out across several wholesalers in different business contexts, such as healthcare and hospitality. Therefore, it is advised that future studies be conducted in different contexts.

This study focuses only on senior employees' perceptions among targeted food wholesalers, whereas AI has a broader meaning that covers all kinds of wholesalers' customers. In the food industry, the term "customer" includes "external" and "internal" customers. External customers are business-to-business (B2B) customers, including retail outlets (supermarkets, grocery stores), food service providers (restaurants, cafes, hotels, caterers), and institutions (universities, hospitals). Internal customers include all employees at all levels of those wholesalers, including professional, technical, and administrative and support staff. Accordingly, it is acknowledged that if this study covered all kinds of wholesalers' customers, it would have been more comprehensive.

Furthermore, we were unable to follow up with non-responders to persuade them to participate and complete the survey because the survey was disseminated anonymously. As a result, the sample could not fairly reflect the opinions of various departments within the participating wholesalers. The primary instrument used in this study was a survey questionnaire, which was used exclusively to collect data from senior personnel. Therefore, it is advised that future studies use data triangulation techniques, such as food manager interviews and observations, to reduce subjectivity in data collection. Lastly, this cross-sectional study was conducted at a specific point in time. As a result, inferences regarding changes over time must be drawn carefully from its data. This restriction will be

addressed primarily through a longitudinal study design to demonstrate causal relationships between variables over time.

6. Conclusion

In response to national initiatives and changes, such as the UAE Artificial Intelligence Strategy 2031 (UAE Cabinet, 2019) and the nationwide digital transformation programs (National Digital Transformation Program, 2024), the study examined how organizational readiness and technological strengths can be used to improve processes in the rapidly digitalizing world. The findings support the hypothesis by demonstrating that IOP is significantly affected by the deployment of AI. AI infrastructure emerged as the most significant predictor, reflecting its crucial role in enabling efficient operations through reliable systems, networks, and digital tools. Additionally, the study provides valuable insights into how food wholesalers can strategically strengthen their IOP. By investing in AI infrastructure, empowering staff, including leadership, improving data quality, and fostering agility, organizations can have more effective, efficient, and adaptable IOP. These findings have applications in both science and industry, offering businesses looking to improve in a rapidly evolving digital landscape a solid roadmap.

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Conflict of interest

Ahmad Aburayya is a Guest Editor of this journal, but was not in any way involved in the editorial and peer-review process conducted for this paper, directly or indirectly. The authors declare they have no competing interests.

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Ethics approval and consent to participate

Ethics approval was obtained from Sovanel Food Ltd (Ref

ID: 3312025), Camp Point Food (Ref ID: 06-221/2525), and Vlara Ltd. (Ref ID: 13/10-2025). All participants provided informed consent before participating in this study.

Consent for publication

All participants provided informed consent for publication before participating in this study.

Availability of data

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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