**NIU Journal of Management Sciences** Copyright©2026
Nexus International University ISSN: *3007-1887;* 12(3): 141-158

# The Impact of Business Intelligence on Achieving Strategic Recovery: An Analytical Study of the Opinions of Management Leaders at the Middle Oil Company

RUAA SALIH MAHDI
Business Administration Department, Faculty of Administration and Economics,
University of Kerbala, Iraq
ruaa.s@ukerbala.edu.iq

**Abstract.**
In this study, it is aimed to show the effect of business intelligence and its sub-dimensions on the realization of strategic recovery in the Middle Oil Company. The study problem arises from the growing uncertainty and environmental disorders that the company faces, which requires the search for advanced technological and knowledge solutions that allow it to adapt and develop rapid response scenarios to deal with crises and ensure the continuity of its work.
Independent variable: (business intelligence) represented by its five dimensions: (data sources, data integration, data warehouse, data analysis, and information presentation). Dependent variable: (strategic recovery) represented by its two dimensions: (growth resilience and stability resilience).

The field study was conducted in the Middle Oil Company and the study population consisted of administrative leaders and specialist professionals in the company. Questionnaires were distributed using purposive sampling and 193 valid questionnaires were collected for statistical analysis to establish the approved database. The study used the questionnaire as the basic technique to collect data from the field. Various advanced statistical approaches were utilized for analyzing the structural linkages, such as descriptive analysis (mean, standard deviation, coefficient of variation), confirmatory factor analysis (CFA) and structural equation modeling (SEM). Statistical software packages SPSS version 26 and AMOS version 27 were used for data processing and analysis.

The inferential analysis showed one of the most important results, the statistically significant and direct positive effect of business intelligence on strategic recovery. The most important element of recovery was the dimension of presenting information. The study's main recommendation, based on these findings, was for the management of the company under study to increase the use of interactive dashboards and simplify the information outputs to accelerate the delivery of key information to senior leadership to make flexible and quick recovery decisions.

**Keywords:** Business Intelligence, Strategic Recovery, Midland Oil Company.

## 1. Introduction

The modern regulatory environment is characterized by quick changes and growing disruptions, which forces institutions, especially major ones such as the Middle Oil Company, to seek dynamic procedures that guaranty their continuity and expansion. In this regard, business intelligence is a pillar of knowledge and technology that enables management to convert massive data into strategic insights. This helps them to achieve the strategic recovery and reestablish the operational equilibrium with high efficiency after the shocks and crises.

The significance of this study is twofold: from a theoretical perspective, it advances the academic literature by providing a framework that connects data analysis techniques and organizational adaptability and, from a practical perspective, it offers procedural tools and field outputs that allow decision-makers in the oil sector to use information flows in the development of rapid response scenarios, so as to protect assets and assure business sustainability.

The lack of Arabic studies that have studied the impact of business intelligence dimensions in detail (sources, integration, repository, data analysis and information presentation) on strategic recovery dimensions (growth resilience and stability resilience) within the framework of national oil institutions is clear evidence of the knowledge gap. This makes this endeavor a first step toward framing this relation in an interactive manner.

The study was of great importance but it also had a number of difficulties and fieldwork requirements. These included the difficulties in obtaining accurate data and verifying its completeness and the problem in getting responses from senior staff due to the stresses of everyday work. The requirement of constant fieldwork and absolute confidentiality on the part of the researcher, as also the scientific responsibility for the use of the most advanced statistical methods to ensure the dependability and accuracy of the results, was necessitated.

The study is composed of four portions. The first section discusses the research technique, the second one is about the theoretical features of the variables and their dimensions, the third portion is about the practical aspects, and the research ends with the findings and recommendations that came from the statistical analysis.

**Research Problem**

The research problem is based on the growing challenges of modern organizations, especially of oil firms, due to the rapidly changing environment, crises and interruptions that influence the consistency of performance and continuity of operation. Given these problems, it has become necessary to implement modern administrative and technological systems that allow businesses develop their ability to confront crises and achieve strategic recovery. Business intelligence is one of the current technologies that helps to support administrative and strategic decisions. It collects, analyzes and transforms data into reliable information that helps management to enhance performance and adapt to the changes of the environment.

Despite the growing interest in business intelligence and strategic recovery, few studies have addressed the nature of the relationship between the dimensions of business intelligence and strategic recovery in the Iraqi oil sector, particularly in the Central Oil Company. This highlights the need to study the extent of the contribution of the dimensions of business intelligence which are data sources, data integration, data warehouses, data analysis and information presentation to achieving strategic recovery in its two dimensions, which are growth resilience and stability resilience. And therefore, the study topic is determined in an attempt to answer the following major question: "What is the impact of the dimensions of business intelligence on the achievement of strategic recovery in the Middle Oil Company?

**Significance of the Research**

The importance of this research is the increasing importance of business intelligence as a modern administrative and technical method that contributes to improving the quality of administrative and strategic decisions through data analysis and turning them into accurate information that supports organizational performance. The research is especially important as it underlines the significance of business intelligence in increasing the capacity of businesses to face crises and difficulties and to achieve strategic recovery, to ensure business continuity and improve competitiveness.

Besides, the research is practically important as it is related to the Middle Oil Company. Its findings are expected to provide a scientific perspective that will enable administrative officials use business intelligence dimensions more effectively to accomplish strategic recovery.

**Research Objectives**

Objectives are:

- To determine the amount of availability of business intelligence aspects at the Middle Oil Company, which are (data sources, data integration, data warehousing, data analysis and information presentation).
- To estimate the amount of strategic recovery of Middle Oil Company in its two dimensions (growth resilience and stability resilience).
- To determine the nature of the relationship between the dimensions of business intelligence and strategic recovery in the Middle Oil Company.
- To measure the influence of the aspects of business intelligence in achieving strategic recovery and strengthening the company's ability to stand against crises and environmental changes.
- To present a collection of proposals and recommendations that allow the Middle Oil Company to use business information more effectively in an effort to achieve strategic

recovery and improve organizational performance.

**Research Hypotheses**

In light of the above, the hypotheses can be addressed as follows:

Main Hypothesis: There is a statistically significant impact of business intelligence dimensions on achieving strategic recovery at the Middle Oil Company. The following sub-hypotheses branch out from this main hypothesis:

There is a statistically significant impact of data sources on strategic recovery.
There is a statistically significant impact of data integration on strategic recovery.
There is a statistically significant impact of the data warehouse on strategic recovery.
There is a statistically significant impact of data analysis on strategic recovery.
There is a statistically significant impact of information presentation on strategic recovery.

Hypothetical Research Plan

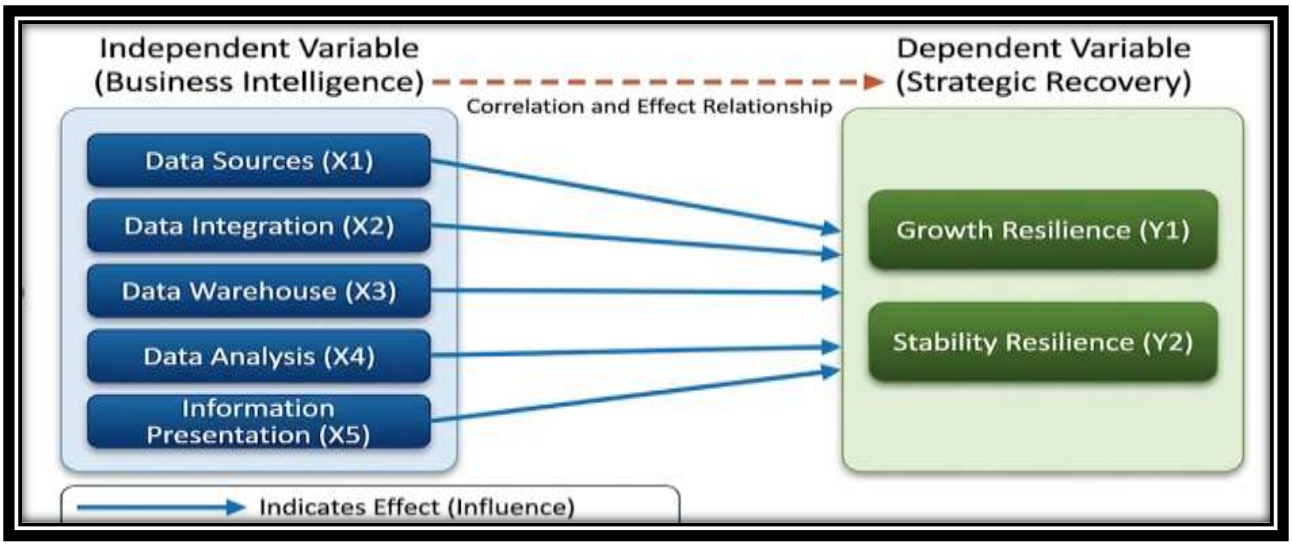


***Figure (1)*** *Hypothetical Diagram of the Research*
*Source prepared by the researcher*

**Research Methodology**

The descriptive-analytical method was chosen because of its compatibility with the nature and objectives of the research. This technique is applied to define and evaluate the phenomena and understand the relationship between its factors, through a study of the impact of business intelligence in the achievement of strategic recovery at the Middle Oil Company. The method was utilized for collecting and scientific analysis of data connected to study variables to produce reliable results supporting research problem and objectives.

**Research Population and Sample**

The research population includes administrative leaders at the Middle Oil Company, as they are the closest to the topics of business intelligence and strategic recovery, as well as having experience and knowledge related to decision-making processes and crisis management in the company. The research sample was purposefully selected from the administrative leaders, heads of departments, divisions and administrative units in the organization, totaling (102) respondents, to collect accurate data that reflect the reality of the research variables.

**Data Collection Tools**

The research relied on two main sources for data collection:

**Theoretical Aspect:** Arabic and foreign books and sources, journals, university theses, and previous studies related to the research variables were used.

**Field Aspect:** The questionnaire was used as the primary data collection tool. It was designed based on literature and previous studies related to business intelligence and strategic recovery.

**Research Measures**

**Table (1)** Research Measures

| Key variable | Sub-dimensions | Number of paragraphs | The symbol | The approved scale |
|---|---|---|---|---|
| Business intelligence | Data Sources | 5 | X1 | (Mohammed & Muhammad,2023) |
| | Data Integration | 5 | X2 | |
| | Data Warehouse | 5 | X3 | |
| | Data Analysis | 5 | X4 | |
| | Information Presentation | 5 | X5 | |
| Business Intelligence (as a whole) | — | 25 | X | (Feng & Wu,2026) |
| Strategic Recovery | Growth resilience | 4 | Y1 | |
| | Stability resilience | 4 | Y2 | |
| Strategic Recovery (as a whole) | — | 8 | Y | |
| Total | — | 33 paragraphs | — | |

***Source:*** *Prepared by the researcher based on the results of the statistical program (SPSS V.26)".*

The primary variables and sub-dimensions on which the research depended to measure its variables are shown in Table (1) of the study scales. The business intelligence variable was examined by the following five primary dimensions: data sources, data integration, data repository, data analysis and information presentation. The business intelligence variable consists of 25 pieces, 5 items for each dimension. The researcher adopted this scale from the study of (Mohammed & Muhammad, 2023), as it is compatible with the nature and objectives of the investigation. The strategic recovery variable was operationalized along two primary dimensions: resilience of growth and resilience of stability. The variable of strategic recovery consisted of (8) elements, (4) items were distributed to each dimension, based on the scale produced by (Feng & Wu, 2026). It is also clear from the table that the total number of items of the questionnaire was (33) items, which serves to show the comprehensiveness of the research tool and its ability to measure the study variables scientifically and accurately, which adds to the reliability of the results and the possibility of relying on them in testing the hypotheses of the research and analyzing the relationships between its variables.

**Theoretical Framework of the Research**

**The Concept of Business Intelligence**

Business intelligence is an integrated set of modern applications and technologies that is used to "collect data from multiple sources, both internal and external, and analyze, process & transform it into information that is accurate for the purpose of turning that into knowledge to help management support strategic decisions as well as aid operational decision making". Business intelligence also helps improve the efficiency of organizations and enhance competitiveness through reports and analyses that predict future problems and opportunities (Khan et al., 2025, p. 6). Turban et al. According to (2011, pp. 10), business intelligence has been defined as a collection of technologies and tools that help convert data into information useful for decision making in order to enhance organizational performance. Business intelligence is considered as an entrepreneurial capacity and it depends on new technologies and data analytics to support aspects of administrative and strategic decisions. It is helpful in converting big data into precise information and knowledge that enables the organization to improve performance, enhance its competitive advantage and adapt itself to the changing business environment. Business Intelligence (BI) serves as the first basic tool in assisting data-driven decision making and organizational efficiency (Mekimah et al., 2023, p. 3). Al-Daraba et al. According to Mekinal (2025, p. 2) competitive insights provided in BI systems are becoming increasingly important for managerial and strategic decision-making.

Business intelligence refers to the analytical methods and techniques that an organisation adopts in order to turn data into information and knowledge that turns into aid, efficiency or competitive advantage. In the same way, BI plays a role in improving function dissemination by giving solid insights that enable management to perform proper strategic planning and

efficient reaction against any changes occurred on the environment so as to allow organizational performance (Ascani et al., 2026, p. 2). BI represents tools and techniques that are used for converting data into strategic information, to make better decisions and gain competitive advantage (Silva Zierz & Lordsleem Junior 2026, p. 2). Business intelligence (BI) is an integrated management and technology system that allows the collection of data from various sources internal to the organization as well as those external, their analysis, processing and conversion into accurate information and knowledge to support administrative and strategic decision-making. According to Estrella Maldonado et al. (2025), Business Intelligence also assists organizations working with data-driven analytical knowledge in creating novel insights within the system and adaptive capacity of an organization that are essential for improving operational performance, competitiveness and environmental adaptability (p. 4). As explained by Kashkul & Falih (2023, p. 406), BI helps with the organizational diplomacy where accurate information and analysis shape better communication, coordination between administrations, as well as excellent institutional performance at universities.

**The Importance of Business Intelligence**

BI importance comes from the fact that provides objects for improving administrative and strategic decision-making based on data collection, integration, analysis, and prediction to help organizations solve problems and forecasts future opportunities. Data is processed and converted to knowledge that can assist an organization in improving performance and strategic planning, therefore business intelligence is one of the most important tools in today' business environment (Mekimah et al., 2025 p. 5). Here are 12Common Business Intelligence Examples & Applications Choosing unbiased, high-quality data to inform decisions professionals Business intelligence is transforming the organizational performance of most enterprises by serving up relevant and timely information on which management can rely while making effective strategic choices. It also strengthens organizations' competitiveness by data analysis and the finding of opportunities and threats in the future, as well as stimulating innovation processes, improvement of services quality and operational processes so it has become an indispensable tool in modern business dynamics (Pancić et al., 2023, p. 4). Wamba et al., 2020, p.1712 state that the outstanding contribution of business intelligence provides with ease any organizational enhancement through consolidating data analysis and precise information for management, supporting administrative and strategic decisions. Business intelligence also constitutes a fundamental pillar in which business organizations depend on improving strategic performance and responding to environmental changes effectively through the application of knowledge and information to support administrative decisions (Al-Maliki et al., 2023, p.168). According to Kashkul & Hashim (2023, p. 296), creative leadership is vital in building organizational trust in educational organizations through facilitating participatory decision making, collaboration and consistent communication among employees. Moreover, Banai (2019, pp. 206) claims that business intelligence creates value by making the organization more attractive as well as supporting administrative leadership armed with analytical knowledge that can augment strategic decision making and promote better organizational performance.

**Dimensions of Business Intelligence**

Business intelligence is a system that consists of collecting, preparing, processing, analyzing and converting data into information for decision making. It includes a few key dimensions, as illustrated by Mohammed & Muhammad (2023).

These are as follows:

**Data Sources:** By using data sources we mean that business intelligence systems sits on top of the original data. They are the main channels of data from operational systems inside or outside the organization: ERP, CRM, databases and electronic applications. The object is to manipulate and convert this data into purposeful information that aids decision following (Negash 2004, p. 178).

**Data Integration:** It refers to the process of gathering data from various sources and connecting it within one consolidated system in consistent fashion with accuracy. This dimension provides quality data and reduces data redundancy and errors, thus providing management with relevant information in time to help them make smarter decisions. Another foundational pillar behind the success of business intelligence systems and reaching its goals is data integration. Efficiency in analysis and planning (Kimball & Ross, 2013, p. 312).

**Data Warehouse:** This is the very basic building block of Business Intelligence systems It is used to retrieve data from several sources and arrange this information in a way that will help users analyze, report, & make decisions. The size of the data warehouse on success in your career and easy access . It also assists in providing the right information

needed, consistently and accurately to help management with planning, forecasting and enhancing organizational performance (Inmon, 2005, p.32).

**Data analysis** – This process involves the examination and organization of data in order to extract information that could be useful for making managerial decisions as well as improving overall organizational performance. It is a vital aspect of business intelligence as it helps convert the unstructured raw data into useful information that can be trusted upon for planning, forecasting and making decisions. It also enables organizations to find out trends, issues and forthcoming opportunities more accurately (Mohammed & Al Murad 2023, p. 105).
Information Presentation: This is how we present analysed information in a clear and well structured format to the user using reports, graphs, dashboards etc. that aids managerial decisions and improve understanding of data within the organization. In addition, the presentation of information makes it easier to access results and turns complex data into interpretable and usable content (Jin & Kim, 2018, p. 4).

**The Concept of Strategic Recovery**

Strategic recovery can be defined as the capacity of an organization to restore its activity and returns to equilibrium after facing crises or challenges. This is done by using adaptive strategies and plans to cope with changes, enhance performance and ensure continuity in this very competitive business environment (Wenzel & Lieberman 2020:14). Strategic recovery refers to the ability of a facility or organization to renew processes and performance after crises or disruptions. This is accomplished through adaptive strategies which increase organizational resilience, help it deal with the challenges of the future, and provide sustainability (Arogyaswamy & Yasai-Ardekani, 1995, p. 497).
Al Mohannadi et al. Strategic recovery (2024, p. 2) refers to the organization restoring stability and performance after experiencing disruptions and crises. This is known as adaptiveness, the realignment of resources and processes to mitigate disruption and perpetuate organization sustainability towards future success. You then relate the strategic recovery primarily to the organizations ability to revert back towards a normal statelike it was before or even more optimal. Strategic recovery means the ability of an organization to face these crises and challenges, regain organizational efficiency by evolving flexible strategies and repositioning resources and specialized capabilities to operationalize stability continuity through strategic viability.

Moreover, the strategic recovery also helps the organization to enhance its competitive position and perform sustainably after a crisis (Mohammed et al., 2025, p. 2). According to Malik & Terzidis (2026, p. 5), strategic recovery is 'an integrated organizational process of recovering performance effectiveness coupled with rebuilding key strategic resources/capabilities as a result of being exposed to disruptions/crises, thereby enhancing organizational resilience while achieving sustainability and future growth'. Mendy et al. Strategic recovery can be defined as the change of the organizational capabilities and restructuring of human resource and organization resources in order to overcome a crisis, gain resiliency, sustainability and growth in future (ElMhemdi et al. Then, strategic recovery is redefined as an organizational process through which disruptions and crises are transformed into opportunities for learning and renewal by realigning resources and capabilities in a way that improves an organization's resilience, continuity, and long-run performance (Conz et al. 2026: p.3).

**The Importance of Strategic Recovery**

Huber et al. According to (2023, p. 2), strategic recovery is significant because it decreases the time needed for key performance indicators to return after the crises and disruptions hit by facilitating operational activities restore business continuity and increasing organizational resilience against uncertainties. It is even more critical through enabling business continuity and strengthening operational and organizational resilience that allows organizations to sustain their primary functions for a shorter period of time following exposure to shocks and crises (Galaitsi et al., 2023, p. 714). Along with build organizational resilience, and the capacity to adapt to environmental change and regain its operational and strategic balance as management after shocks (Boin & van Eeten, 2013, pp. 429–432); Strategic recovery also plays a role in preserving performance.

**Dimensions of Strategic Recovery**

The study contains two fundamental elements of strategic recoveries, as noted in the research by Feng & Wu (2026):
Growth Resilience: Growth resilience is an ability of company to alter business strategies and resource allocation that may likely help the organization achieves targeted strategic growth and development during periods of uncertainty or crisis, where sustainability becomes a priority (Bachtiar et al., 2023, p. 3). As Chen et al. However, as (2023, p. 2) noted:

Sustainable growth cannot be accomplished without organization resilience in adapt to changing environments and convert the challenges into opportunities supporting expansion that ultimately leads value generation in the long run.

**Resilience and Stability:** This means an organizational status of maintaining operational continuity, performance stability, and minimising fluctuations due to crises/changes /environmental disturbances. This helps ensure, one, the continuity of core activities, and two, finding balance inside an organisation (Hepfer & Lawrence, 2022:18). As stated by Feng & Wu (2026, p. 4), resilience and stability are recorded as the dimension that shows an organization can maintain relatively stable performance with less volatility before and after a crisis or other external shocks. That allows the organization to continue to deliver its products and services, while enabling it to achieve its operational and strategic goals.

**The Practical Aspect of the Research**

Section Three intends to test the research hypotheses and confirm the nature of the link and influence between its variables in a field and scientific manner at Middle Oil Company as follows:

**Description and Characterization of the Research Sample**

In this part, the demographic and functional characteristics of the research sample are presented. These qualities are important for the interpretation and scientific analysis of the study results, since they represent the level of expertise and scientific and administrative competence of the sample members, and, thus, contribute to the enhancement of the reliability and accuracy of the data.

**Table (2)** Demographic description of the research sample

| Variable | Category | repetition | (%) |
|---|---|---|---|
| Gender | Male | 79 | 77.5 |
| | Female | 23 | 22.5 |
| Educational Qualification | Diploma | 12 | 11.8 |
| | Bachelor's | 57 | 55.9 |
| | Master's | 26 | 25.5 |
| | PhD | 7 | 6.8 |
| Years of Service | Less than 5 years | 15 | 14.7 |
| | 5–10 years | 28 | 27.5 |
| | 11–15 years | 35 | 34.3 |
| | Over 15 years | 24 | 23.5 |
| Job Title | Manager | 16 | 15.7 |
| | Department Head | 31 | 30.4 |
| | Division Head | 36 | 35.3 |
| | Unit Manager | 19 | 18.6 |
| the total | | 102 | 100.0 |

***Source:*** *Prepared by the researcher based on the results of the statistical program (SPSS V.26)*

The results as shown in Table (2) showed that the males represented 77.5% of the sample, which is the highest percentage compared to females (22.5%). Because the nature of the administrative and technical job in the oil business requires particular field and administrative competence. The results also revealed that the biggest percentage of the participants were bachelor's degree holders (55.9%). Thus, the sample had a proper level of knowledge to comprehend the research themes and variables.

The greatest percentage was in the age group of 11-15 years with 34.3% in terms of years of service, which reflects the practical and administrative experience of the sample, which qualifies it to deliver accurate and objective replies. In addition, 35.3% of the sample were department heads, which increases the reliability and correctness of the data acquired in the interpretation of the research variables in the Middle Oil Company.

**Testing the Validity and Reliability of the Research Instrument:**

The study used a questionnaire as the main instrument in collecting data related to the study variables. To validate the validity of the instrument, it was submitted to a committee of experts and professionals in strategic management and management information systems. This was to confirm that the phrasing of the items is accurate and appropriate to measure the research variables and dimensions. A number of observations made by professionals were taken into consideration to improve the face validity and scientific content of the questionnaire. To examine the reliability of the instrument, the internal consistency of the questionnaire items was measured using Cronbach's Alpha coefficient with

the SPSS V.26 statistical program. Coefficient is one of the most extensively used statistical tools in the assessment of dependability of research equipment. The results revealed that all Cronbach's Alpha values were above the statistically permissible minimum of 0.70, indicating that the questionnaire had a high degree of reliability and internal consistency.

**Table (3)** Reliability and Internal Consistency Test Results

| Variables | Number of paragraphs | Cronbach's alpha coefficient |
|---|---|---|
| Data Sources | 5 | 0.892 |
| Data Integration | 5 | 0.901 |
| Data Warehouse | 5 | 0.909 |
| Data Analysis | 5 | 0.914 |
| Information Presentation | 5 | 0.887 |
| Business Intelligence (as a whole) | 25 | 0.937 |
| Growth Resilience | 4 | 0.884 |
| Stability Resilience | 4 | 0.876 |
| Strategic Recovery (as a whole) | 8 | 0.912 |
| All Study Variables | 33 | 0.945 |

***Source:*** *Prepared by the researcher based on the results of the statistical program (SPSS V.26)*

Table (3) showed high values of Cronbach's alpha coefficient, all of which exceeded the statistically accepted value, which indicates a high degree of internal consistency among the questions of the questionnaire and the reliability of the questionnaire in data collection, analysis and hypothesis testing. Results also revealed that the Business Intelligence variable (as a whole) had a (0.937) reliability coefficient and the Strategic Recovery variable (as a whole) had a (0.912) reliability coefficient. The high results confirm the dependability of the data collected from the sample and the feasibility of the device for field use. The highest value of reliability (0.914) was found in the sub-dimension level by the Data Analysis dimension, followed by the Data Warehouse (0.909) and Data Integration (0.901). This demonstrates that the items of these dimensions are strongly connected and can measure the related ideas accurately. The Stability and Growth Strength The Resilience dimensions likewise obtained high values of (0.884) and (0.876) respectively, which shows the stability and consistency of the sample responses. The total reliability coefficient for all the research variables was (0.945), which is a very high value that confirms the high degree of reliability and credibility of the research tool, which increases the accuracy of the results obtained and the possibility of relying on them in interpreting the relationships between the study variables and testing its hypotheses scientifically.

**Descriptive Analysis of Research Variables**

**Descriptive Analysis of Business Intelligence Dimensions**

The dimensions of business intelligence (data sources, data integration, data warehouse, data analysis, and information presentation) were analyzed using the arithmetic mean, standard deviation, and relative importance to determine the level of availability of these dimensions at the Middle Oil Company.

**Table (4)** Descriptive Analysis of Business Intelligence Dimensions

| Dimensions of Business Intelligence | arithmetic mean | standard deviation | Coefficient of variation (%) | Relative importance (%) | Sequence |
|---|---|---|---|---|---|
| **Data Sources** | **3.52** | **0.71** | **20.2%** | **70.4%** | **4** |
| **Data Integration** | **3.67** | **0.68** | **18.5%** | **73.4%** | **3** |
| **Data Warehouses** | **3.38** | **0.75** | **22.2%** | **67.6%** | **5** |
| **Data Analysis** | **3.77** | **0.63** | **16.7%** | **75.4%** | **1** |
| **Information Presentation** | **3.73** | **0.66** | **17.7%** | **74.6%** | **2** |
| **Overall Average** | **3.61** | **0.69** | **19.0%** | **72.3%** | |

***Source:*** *Prepared by the researcher based on the results of the statistical program (SPSS V.26)*

As can be seen from the findings of the descriptive statistical analysis presented in the table above, the general level of application of business intelligence dimensions at the Middle Oil Company was high and favorable. The whole arithmetic mean was (3.61), higher than the supposed mean of the measurement, with a total standard deviation of (0.69). Also, the overall coefficient of variation was reported at (19.0 %), and the relative importance reached (72.3 %). The results reflect the commitment of the company's senior management to improve the foundations and knowledge base of business intelligence among its administrative staff, representing a favorable and precise foundation for supporting decision-making, predictability and efficient response to environmental changes.

The importance and dispersion were classified at the level of the sub-dimensions of business intelligence using the coefficient of variation (the smaller the percentage, the more the homogeneity and stability in the answers of the sample). The analysis of each dimension is as follows:

Data Analysis Dimension (First Rank): This dimension was ranked first amongst all dimensions, being the most homogenous and stable dimension. The lowest coefficient of variation (CV) was 16.7%, standard deviation 0.63, mean 3.77 and relative importance 75.4%. This result demonstrates that management executives are well cognizant of the need to transform raw data to valuable knowledge and relevant information. Data analysis is the backbone of supporting strategic decisions and the successful and consistent management of crises.

Information Presentation Dimension (Second Rank): The information presentation dimension was second ranked in terms of consistency and relevance with a CV of 17.7%, standard deviation 0.66, high positive mean 3.73 and relative importance of 74.6%. This score shows the company's emphasis on clear and interactive procedures and reports (dashboards) to ease management leaders' access and flexible examination of outputs. Additionally, the importance of the way in which information is delivered to leadership is a strongly agreed upon factor amongst responders.

Data Integration Dimension (Third Rank): The data integration dimension took the third rank with a coefficient of variation of 18.5% and a standard deviation of 0.68. It scored a mean of 3.67 and a relative relevance of 73.4%. This result confirms good connectivity and coordination between sources and systems across different departments and sources within the company. This ensures data flow and reduces organizational inconsistencies thus promoting transparency and comprehensive decision-making.

Data Sources Dimension (Fourth Rank): The data sources dimension ranked fourth with a coefficient of variation of 20.2%, and standard deviation of 0.71, mean of 3.52 and relative importance of 70.4%. This result shows the availability of different data frameworks and inputs (internal and external) despite the small relative difference in the opinions of the sample compared to the previous dimensions, which requires the continuous diversification and update of data collection sources within the company.

Data Warehouse Dimension (5th Rank): The data warehouse dimension ranked last in terms of the homogeneity of responses as it had the highest coefficient of variation (22.2%) and a standard deviation of (0.75) although it attained a mean of (3.38) and a relative importance of (67.6%). This result suggests a reasonable level of aggregated storage infrastructure for historical and operational data. However, the relatively significant spread of answers indicates different views of leadership on the sufficiency, efficacy and modernization of existing data warehouses, which requires additional attention and development of technologies.

**Descriptive Analysis of Strategic Recovery**

Strategic recovery was measured through two main dimensions: growth resilience and stability resilience, to identify the company's ability to withstand crises and adapt to environmental changes.

**Table (5)** Descriptive Analysis of the Dimensions of Strategic Recovery

| Dimensions of Strategic Recovery | arithmetic mean | standard deviation | Coefficient of variation (%) | Relative importance (%) | Sequence |
|---|---|---|---|---|---|
| **Growth Resilience** | **3.54** | **0.72** | **20.3%** | **70.8%** | **4** |
| **Stability Resilience** | **3.64** | **0.65** | **17.9%** | **72.8%** | **2** |
| **Aggregate Average** | **3.59** | **0.69** | **19.1%** | **71.8%** | |

***Source:*** *Prepared by the researcher based on the results of the statistical program (SPSS V.26)*

The results of the descriptive statistical analysis in the table above showed that the level of strategic recovery at the Middle Oil Company was highly rated and positive, with a general arithmetic mean of (3.59), which is greater than the hypothetical mean of the measurement and a total standard deviation of (0.69). Besides, the overall coefficient of variation was reported at (19.1 %), and the relative importance was (71.8 %). Such findings are indicative of the enormous organizational capacity of the company to adjust to crises and external environmental changes and reaffirm the dedication of the management leadership to find a balance between absorbing operational shocks and continuing to move forward with strategic goals.

The importance and dispersion of the sub-dimensions of strategic recovery were graded according to the coefficient of variation (the smaller the percentage, the higher the degree of homogeneity and stability in the replies of the sample members). The breakdown per dimension is:

Resilience and Stability Dimension (First Rank/Most Homogeneous): This dimension was ranked first in the dimensions of strategic recovery as the most homogeneous and consistent. The minimum coefficient of variation was 17.9% with standard deviation of 0.65, mean of 3.64 and relative importance of 72.8%. This finding shows a high level of consensus among the sample on the ability of the Middle Oil Company to maintain the stability of its core operations, protect its assets and operate them routinely in times of crises or disruptions, thus forming the first line of defense for organizational recovery.

Second Position, Growth Resilience Dimension: The growth resilience dimension was ranked second in terms of homogeneity degree of the responses, since it recorded a coefficient of variation equal to 20.3% and a standard deviation equal to 0.72, with a positive mean equal to 3.54 and a relative importance equal to 70.8%. The finding implies a proclivity of the firm to leverage new opportunities appearing following crises and grow adaptively. However, the relatively substantial divergence of viewpoints compared to the stability dimension, indicates different leadership views on the avenues and processes for capturing the quick development potential in the changed circumstances.

**Confirmatory Factor Analysis (CFA)**

The researcher conducted confirmatory factor analysis (CFA) using structural equation modeling software (e.g., AMOS) to confirm the validity and capability of the dimensions and indicators used to measure the main variables (business intelligence and strategic recovery) and to verify the factor structure of the study scale. The objective of this investigation is to verify the compatibility of the chosen theoretical model with the acquired cohort data from the Middle Oil Company. The fit indices need to be within the literature- and statistically acknowledged boundaries and criteria for the model acceptance and measurement stability.

The statistical indicators used for the confirmatory factor analysis and the cut-off values proposed to demonstrate the quality of the fit of the model are presented in the following table:

**Indicators of the Quality of the Fit Table (6)**

| Indicators | Conformity Quality Rule |
|---|---|
| Comparative Fit Index (CFI) | ≥0.90 |
| Normed Fit Index (NFI) | ≥ 0.90 |
| Goodness of Fit Index (GFI) | ≥ 0.90 |
| Root Mean Square Error of Approximation (RMSEA) | Less than or equal to 0.08 |

Hair, J., Hult., Ringle, C. & Sarstedt, M. (2017). A primer on partial least squares structural equation modeling (PLS-SEM. Los Angeles: Sage

**Table (7)** Construct validity of study variables

| Paragraph | The path | Dimension | Estimate | S.E. | C.R. | P |
|---|---|---|---|---|---|---|
| X11 | <--- | | .832 | .069 | 18.570 | *** |
| X12 | <--- | | .855 | .076 | 19.332 | *** |
| X13 | <--- | **Data Sources** | .882 | .060 | 20.196 | *** |
| X14 | <--- | | .796 | | | |
| X15 | <--- | | .828 | .062 | 18.441 | *** |
| X21 | <--- | | .857 | .116 | 13.044 | *** |
| X22 | <--- | | .830 | .110 | 12.773 | *** |
| X23 | <--- | **Data Integration** | .868 | .123 | 13.148 | *** |
| X24 | <--- | | .627 | | | |
| X25 | <--- | | .596 | .092 | 9.903 | *** |
| X31 | <--- | | .738 | .061 | 14.727 | *** |
| X32 | <--- | **Data Warehouse** | .710 | .063 | 14.074 | *** |
| X33 | <--- | | .881 | .073 | 18.066 | *** |
| X34 | <--- | | .694 | .056 | 13.701 | *** |

| | | | | | | |
|---|---|---|---|---|---|---|
| X35 | <--- | | .783 | | | |
| X41 | <--- | | .770 | .100 | 12.384 | *** |
| X42 | <--- | | .818 | .097 | 12.912 | *** |
| X43 | <--- | **Data Analysis** | .706 | .113 | 11.567 | *** |
| X44 | <--- | | .667 | | | |
| X45 | <--- | | .475 | .083 | 8.136 | *** |
| X51 | <--- | | .730 | .091 | 12.809 | *** |
| X52 | <--- | | .701 | .088 | 12.328 | *** |
| X53 | <--- | **Information Presentation** | .715 | .079 | 12.557 | *** |
| X54 | <--- | | .712 | | | |
| X55 | <--- | | .654 | .090 | 11.536 | *** |
| Y11 | <--- | | .602 | | | |
| Y12 | <--- | **Growth Flexibility** | .729 | .082 | 12.730 | *** |
| Y13 | <--- | | .865 | .078 | 14.755 | *** |
| Y14 | <--- | | .910 | .084 | 15.347 | *** |
| Y21 | <--- | | .655 | | | |
| Y22 | <--- | **Stability Flexibility** | .697 | .076 | 11.446 | *** |
| Y23 | <--- | | .861 | .101 | 13.345 | *** |
| Y24 | <--- | | .770 | .086 | 12.380 | *** |

*The source was prepared by the researcher using AMOS software.*

The findings of the confirmatory factor analysis (CFA) presented in the above table reveal the high quality and applicability of the construct validity for all items and variables of the study. The calculated standard regression weights/saturations for all items in the dimensions of business intelligence and strategic recovery ranged from 0.475 to 0.910, high or very close to the acceptable statistical standard of 0.50. This confirms the effective connection of each item to the dimension it is given to. The test findings also showed that all the critical ratios (C.R.) had high positive values with significant p-value ($p < 0.001$) represented by the symbol (***). This indicates the explanatory power of the items and the high ability of the measurement instrument to precisely and reliably represent its theoretical dimensions, allowing for hypothesis testing.

**Empirical Verification of the Research Hypotheses**

This section describes the testing and interpretation of the major and sub-hypotheses through Structural Equation Modeling (SEM). The goal was to determine the extent to which the dimensions of business intelligence are able to anticipate and explain the variance in strategic recovery at the Middle Oil Company. This innovative technique enables measurement of direct and indirect effect relationships and testing of the whole structural model with high accuracy without measurement error.

Simple Pearson correlations were first assessed and shown among all the study variables and dimensions before completing the structural effect tests. It is a systematic statistical procedure that aims to ensure numerical correlation and consistency among the dimensions in question, and to guaranty the absence of multicollinearity . Thus, it provides a solid and scientifically sound basis for building and testing the direct structural model, and efficiently testing the influence hypotheses.

(8) Pearson Correlation Matrix between the Dimensions of Business Intelligence and Strategic Recovery

| **Variables and dimensions** | **Data Sources (X1)** | **Data Integration (X2)** | **Data Warehouse (X3)** | **Data Analysis (X4)** | **Information Presentation(X5)** | **Business Intelligence as a whole) (X)** |
|---|---|---|---|---|---|---|
| **Strategic recovery (as a whole)** | .582** | .641** | .528** | .695** | .618** | .728** |

**Note:** The correlation is significant at the ($\alpha < 0.01$) (2-tailed) level.

**Researcher's calculation from SPSS outputs.**

The findings of the statistical analysis presented in the above table indicate a positive and statistically significant relationship at the ($\alpha < 0.01$) level between the dimensions of business intelligence and the dependent variable (strategic recovery). The correlation coefficient of the overall business intelligence variable (X) with strategic recovery (Y) is strong at the level of (0.728X). At the dimension level, the largest correlation was data analysis (X4) (0.695X),

followed by data integration (X2) (0.641X), information presentation (X5) (0.618X) and data sources (X1) (0.582X). The lowest correlation was for data repositories (X3) (0.528X. Such correlations are a very important statistical indicator confirming the strong association between the variables. The data environment is therefore appropriate for the direct testing of the impact hypotheses by means of Structural Equation Modeling (SEM).

### 4.5.1. Testing main research hypothesis

This hypothesis is: (The presence of a positive and important impact relationship between competitive intelligence and its dimensions on strategic recovery and its dimensions in the examined organization). The structural model to evaluate the major impact hypothesis was developed in AMOS version 27 and the goodness-of-fit indices suggested an excellent fit for the proposed model with the cohort data. The standardized chi-squared value (CMIN/DF = 2.776) was within acceptable limit (less than 3) and the conformity quality index (GFI = 1.00), comparative conformity index (CFI = 0.954), non-standard conformity index (TLI = 0.932) and incremental conformity index (IFI = 0.920) all recorded values above the standard (0.90). Furthermore, the root mean squared rounding error reached an ideal value (RMSEA = 0.071) which is smaller than (0.08). The inferential analysis demonstrated a direct positive effect of business intelligence (X) on strategic recovery (Y) with a standardized regression weight of (S.R.W = 0.715), a standard error of (S.E. = 0.066), and a computed value (T-value = 7.600) at a significant level of significance (P < 0.001). Business intelligence also accounted for variance in strategic recovery (R2 = 53%), which confirmed the full acceptance of the primary premise.

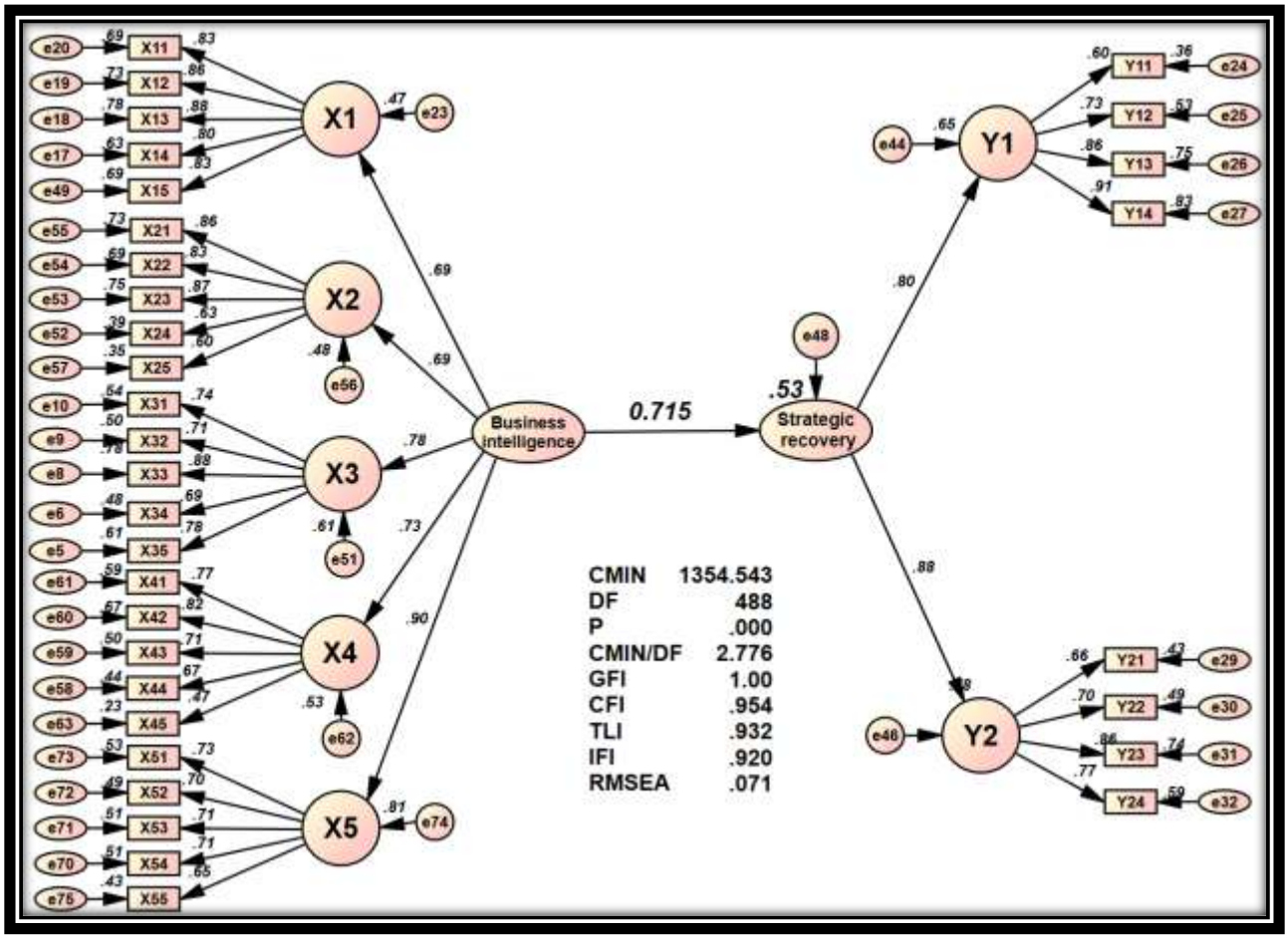


***Figure (2)*** *Structural model for testing the main research hypothesis*
***Source:*** *Prepared by the researcher based on the results of AMOS V.27*

**Table (9)** Results of evaluating the main hypothesis model

| PATH | S.R. W | S.E. | T- value | P -value | $R^2$ | Decision |
|---|---|---|---|---|---|---|
| X→ Y | 0.715 | 0.066 | 7.600 | *** | 0.53 | Accept |

***Source:*** *Prepared by the researcher based on the results of AMOS V.27*

### 4.5.2. Testing the research sub-hypotheses

After completing the testing of the main hypothesis regarding the effect between the independent and dependent variables, we now move on to testing the sub-hypotheses derived from it in Figure ( 3) and Table (10 ), as follows:

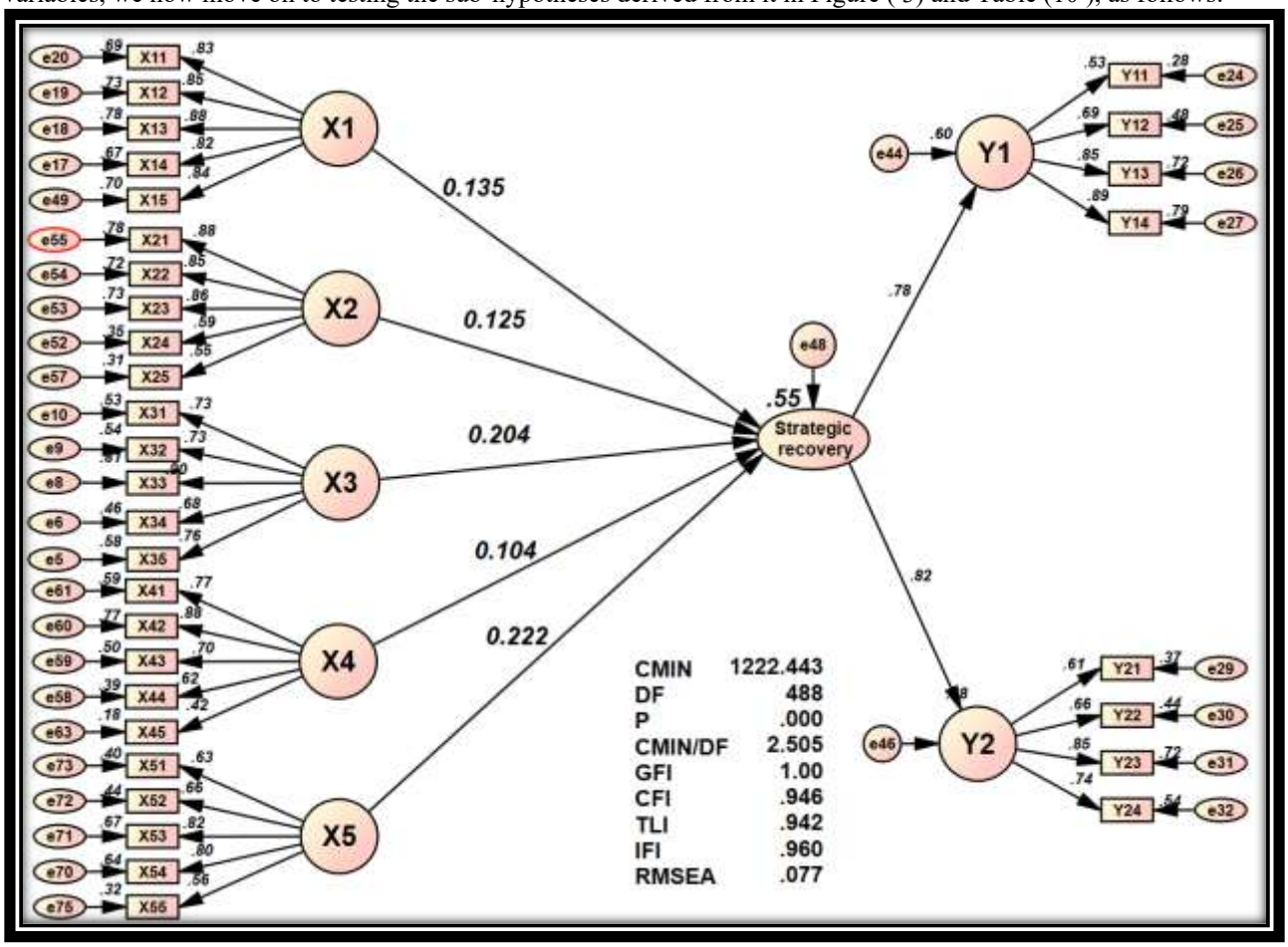


Figure (3) Structural model for testing sub-hypotheses

**Table (10)** Results of evaluating the sub-hypotheses model for the hypothesis

| PATH | S.R. W | S.E. | T- value | P -value | $R^2$ | Decision |
|---|---|---|---|---|---|---|
| X1 → Y | 0.135 | 0.057 | 4.432 | *** | 0.55 | Accept |
| X2 → Y | 0.125 | 0.069 | 4.006 | *** | | Accept |
| X3 → Y | 0.204 | 0.071 | 4.115 | *** | | Accept |
| X4 → Y | 0.104 | 0.042 | 3.326 | *** | | Accept |
| X5 → Y | 0.222 | 0.083 | 4.765 | *** | | Accept |

***Source:*** *Prepared by the researcher based on the results of AMOS V.27*

The AMOS V.27 program was used to construct the structural model to test the sub-hypotheses. The results indicated an outstanding and very good agreement between the proposed model and the field data. The standardized chi-squared value (CMIN/DF = 2.505) was within the allowed limits. The quality of fit index (GFI = 1.00), comparative fit index (CFI = 0.946), non-standard fit index (TLI = 0.942), and incremental fit index (IFI = 0.960) were recorded. Also, the root mean squared rounding error index (RMSEA = 0.077) was noted. These indices support the validity of the structural model to examine the direct correlations

hypothesized between business intelligence dimensions and strategic recovery.

The outcomes of the hypotheses are interpreted based on the outputs of the structural model for the sub-hypotheses presented in Figure (3) and Table (10) as follows:

Sub-hypothesis 1 (X1 → Y):

The results show a statistically significant direct positive effect of data sources dimension on strategic recovery. The standard regression weight (S.R.W = 0.135) with standard error (S.E. = 0.057) was obtained and its significance was confirmed by a computed t-value (T-value = 4.432) and a significance level (P < 0.001). This finding demonstrates that the company's dependence on heterogeneous and dependable data sources has a meaningful role in strengthening the resilience and recovery capacities of the company's strategy and, thus, supports the first sub-hypothesis.

The second sub-hypothesis (X2 → Y)

The findings showed that the data integration dimension had a statistically significant, direct, and positive effect on strategic recovery with a standard regression weight (S.R.W = 0.125), a standard error (S.E. = 0.069), and a calculated t-value (T-value = 4.006) at a significant level of (P < 0.001). This finding is reflective of the function of coordination and integration across multiple systems and data sources inside the corporation in speeding up decision-making processes that support the stability and growth of the organization, hence requiring the acceptance of the second sub-hypothesis.

Third sub-hypothesis (X3 ->Y):

The analytical results verified the statistically substantial direct positive effect of the data warehouse dimension on strategic recovery. This dimension had a standardized regression weight of (S.R.W = 0.204), standard error of (S.E. = 0.071), computed t-value of (T-value = 4.115) and significance level of (P < 0.001). This figure shows that the storage of standardized and historical data is one of the main pillars for the corporation to recover knowledge and preserve assets in times of crisis, which makes it necessary to accept the third sub-hypothesis.

Fourth sub-hypothesis (X4→Y):

For the data analysis dimension, it had a statistically significant direct beneficial effect on strategic recovery. The study reached a standard regression weight of (S.R.W = 0.104) with a standard error of (S.E. = 0.042), and a calculated t-value of (T-value = 3.326), at a significant level of (P < 0.001). The result indicates that information extraction and predictive knowledge obtained through data analysis facilitate the development of strategic alternatives and solutions in line with environmental changes, thereby validating the fourth sub-hypothesis.

The fifth sub-hypothesis (X5 → Y)
The results demonstrated that the information presentation dimension has a strong direct positive effect on strategic recovery. It produced the maximum standard regression weight (S.R.W = 0.222) with standard error (S.E. = 0.083) and estimated t-value (T-value = 4.765) at significant level (P < 0.001). The outcome shows that the way of presenting and simplifying information through interactive reports and dashboards is important for management to adopt recovery actions flexibly and swiftly, thereby confirming the fifth sub-hypothesis.
The overall results of the structural sub-model indicate high explanatory power. The combined coefficient of determination ($R^2$ = 0.55) indicates that the five dimensions of business intelligence together explain 55% of the variance and change in achieving strategic recovery in the Middle Oil Company, while the remaining 45% is attributed to other factors and dimensions not addressed by the model. In terms of the relative importance and impact of the dimensions, the Information Presentation dimension (X5) ranked first as the most influential dimension with a standard weight (S.R.W = 0.222), followed immediately by the Data Warehouse dimension (X3) with an impact of (0.204), then Data Sources (X1) with (0.135), and Data Integration (X2) with (0.125), and the least influential was Data Analysis (X4) with a value of (0.104).

## Conclusions and Recommendations

### 5.1. Conclusions

According on the respondents' replies, we conclude that the Middle Oil Company uses a wide range of internal and external sources for data collection. This is a basic input which provides its systems with the information necessary to support the decision-making process.

The descriptive analysis points to a high degree of integration and coordination among the many organizational systems and departments of the corporation. This assures the flow of data and reduces operational inconsistencies, improving transparency.

According to the responses, the organization has a consolidated storage infrastructure for keeping historical and operating data. There is a relative disparity among leadership, however, indicating a need for constant update and enhancement of these digital repositories.

The descriptive data indicates that management has a strong grasp of the significance of the conversion of raw data into knowledge value. Advanced analysis is the most consistent and secure foundation for support of the strategic decisions of the firm.

The organization relies on simple and straightforward interactive dashboards and reports according to field data. This gives fast access to the results for the decision-makers and a very flexible interpretation in case of revisions.
Overall descriptive assessment points to a strong senior management focus on strengthening business intelligence skills and knowledge infrastructure, creating an organizational environment suitable to early prediction and rapid response to a variety of developing situations.

The sample group responses show the company's efforts to stay current with modern software programs, which have a direct impact on improving the efficiency of processing the daily information flows and their administrative application.

The results of the descriptive analysis indicate a good consensus among respondents on the company's capacity to safeguard its assets and to keep regularly its basic operational processes in the event of shocks and crises, which is the first line of defense for recovery.

The responses of the respondents reflect a company orientation toward the exploitation of opportunities occurring from crises and adaptive expansion but some relative disparities in the opinions about the best and fastest ways to exploit these opportunities.

The overall assessment of the dependent variable shows that the Middle Oil Company has high organizational flexibility that allows it to react to environmental disruptions and its leadership is devoted to balancing shock absorption with the achievement of its objectives.

The results of the field analysis indicate that there are dynamic management capabilities that enable the reallocation and safeguarding of available resources. This helps to minimize the harm caused by unexpected changes and makes it possible to return to normalcy rapidly.

The sample's opinions allow us to conclude that the company has a strong ability to change its operational and strategic plans to respond to new conditions, ensuring the sustainability and smooth work of its job in critical moments.
The impact study results lead us to conclude that the diversification and development of data sources directly and significantly contribute toward improving the strategic recovery capabilities of the organization. Robust data is the foundation for informed decision-making.

The results of the inferential analysis show that data integration and interdepartmental networking have a considerable positive impact on strategic recovery, by speeding up information transmission and reducing conflicts in times of crisis.

Our structural route analysis indicates that the organized ownership of data repositories is important for strategic recovery, as it provides a historical reference point for leadership to recollect past experiences and lessons learned.
The inferential analysis indicates that the processing and analysis of data play a substantial beneficial impact in assisting the strategic recovery. Analytical processing helps generate predicted insights and formulate options to solve issues.

Effects of the structure indicate that the interactive presentation and systematic simplification of information are the most influential facet in the strategic recovery process, as they bring clarity and speed to the executive leadership in the face of new developments.

### 5.2. Recommendations

The study suggests diversifying the ways and instruments for gathering operational and environmental data, and extending digital relationships to continuously offer the company's systems with correct and updated information.
The report advocates the need to establish infrastructure for automated connectivity across all administrative units and departments, to ensure data flow and to eradicate the problem of isolated information silos.

The report proposes modernizing existing data repositories, providing them with new security and retrieval technologies to reduce the variances in the

usage efficiency and allow leadership to access previous data.

The study advises the development of the abilities of human resources in advanced analysis and the use of statistical forecasting tools to improve the quality of knowledge retrieved and to support good strategic decision-making.

The study suggests the broader use of interactive dashboards and the creation of visually summarized reports for the speedy delivery of key insights and information to senior management.

The study suggests increasing the financial and technological allocation for full business intelligence applications, because they are the main driving force for boosting organizational performance and responding to external changes.
The organization under consideration needs to build integrated contingency plans and protect its essential databases to ensure the continuity of core operations and assets in the event of organizational shocks.

It proposes the creation of a strategic monitoring unit to detect the investment and operational opportunities that come after crises, assuring the company's planned expansion and growth.

Creating a flexible organizational culture that enables management to respond rapidly to the results of crises and aligns risk management plans with the long-term strategic vision of the company.

Concentrating on how information is presented and simplified and teaching the senior leaders to evaluate information, as this has a direct and fundamental impact on obtaining the highest levels of recovery.

The studied organization should have smart software solutions to its digital infrastructure to reduce human error and accelerate data processing and flow across different management levels.

Introducing periodic performance indicators to monitor the effectiveness of business intelligence aspects and their preparedness to help recovery, and ongoing assessments to revise the company's crisis management strategy.

**References**


Al Mohannadi, I. M., Naji, K. K., Abdella, G. M., Nabeel, H., & Hamouda, A. M. (2024). Towards a Resilient Organization: Lessons Learned from the Oil and Gas Sector in Qatar. *Sustainability, 16(1),* 109. https://doi.org/10.3390/su16010109.

Al-Daraba, K., Al-shami, S. A., Rashid, N., & Qureshi, M. I. (2025). Systematic review of factors influencing adoption of business intelligence systems. *Discover Sustainability, 6,* 936. Springer. https://doi.org/10.1007/s43621-025-01876-5.

Al-Hamdani, M. M., & Kazim, D. A. M. (2023). Image culture and its effectiveness in enhancing digital marketing in private universities: An exploratory analytical study of the opinions of a sample of students at Warith Al-Anbiyaa University. *Warith Scientific Journal,* 5(May), 306–322.

Al-Maliki, N. A. Y., Kashkul, H. M. A., & Al-Fatlawi, M. M. (2023). The role of knowledge management strategies in enhancing the strategic performance of business organizations: An applied study at Al-Bayan National University. *Warith Scientific Journal,* 5(May), 166–181.

Arogyaswamy, K., Barker, V. L., & Yasai-Ardekani, M. (1995). Firm turnarounds: An integrative two-stage model. *Journal of Management Studies, 32(4),* 493–525. https://doi.org/10.1111/j.1467-6486.1995.tb00786.x.

Ascani, I., Sardini, A., & Montemari, M. (2026). Orchestrating the flow of information for decision making: New dynamics between management accountants and operational managers leveraging business intelligence & analytics systems. *Journal of Management Control*. https://doi.org/10.1007/s00187-026-00413-3.

Bachtiar, N. K., Setiawan, A., Prastyan, G. A., & Kijkasiwat, P. (2023). Business resilience and growth strategy transformation post crisis. *Journal of Innovation and Entrepreneurship, 12(77)*. https://doi.org/10.1186/s13731-023-00345-5.

Banai, D. F. (2019). The extent of leadership compensations contribution in influencing the attractiveness of organizational ideology in private colleges: An analytical study of the opinions of a sample of lecturers in private colleges in Karbala. *Muthanna Journal of Administrative and Economics Sciences, 9(4),* 206–220.

Boin, A., & van Eeten, M. J. G. (2013). The resilient organization. Public Management Review, 15(3), 429–445. https://doi.org/10.1080/14719037.2013.769856.

Chen, G., Nie, Q., & Zhao, H. (2023). The Influence Factors of Organizational Resilience from a CSR Perspective and Their Impact on

Business Growth. *Sustainability, 15(22),* 15712. https://doi.org/10.3390/su152215712.

Conz, E., Levanti, G., Magnani, G., & Ferraris, A. (2026). Navigating organizational resilience in SMEs: Integrating cognitive, technological, and value chain perspectives. *Review of Managerial Science.* https://doi.org/10.1007/s11846-026-01030-z.

Estrella Maldonado, D., Carlos Diaz, M., & Valdiviezo Gonzales, L. (2025). Business intelligence for improving decision making and organizational performance: A systematic literature review (2019–2024). LACCEI International Multi-Conference for Engineering, Education and Technology. https://doi.org/10.18687/LACCEI2025.1.1.881.

Feng, X., & Wu, X. (2026). Strategic Orientations and Organizational Resilience: The Moderating Role of Digital Technology. Systems, 14(2), 159. https://doi.org/10.3390/systems14020159.

Galaitsi, S. E., Pinigina, E., Keisler, J. M., Pescaroli, G., Keenan, J. M., & Linkov, I. (2023). Business Continuity Management, Operational Resilience, and Organizational Resilience: Commonalities, Distinctions, and Synthesis. *International Journal of Disaster Risk Science, 14,* 713–721. https://doi.org/10.1007/s13753-023-00494-x.

Ghali, L. H. H. (2026). The Impact of Organizational Flexibility in Promoting the Strategic Recovery of The Organization. Library of Frontline Marketing, *Management and Economics Journal,* 6(02), 70-88.

Hepfer, M., & Lawrence, T. B. (2022). The heterogeneity of organizational resilience: Exploring functional, operational and strategic resilience. Management and Organization Review. https://doi.org/10.1177/26317877221074701

Huber, M., Komatina, N., Paunović, V., & Nestić, S. (2023). Analysis of the Relationship between the Organizational Resilience Factors and Key Performance Indicators' Recovery Time in Uncertain Environments in Industrial Enterprises. *Mathematics, 11(14),* 3075. https://doi.org/10.3390/math11143075 .

Inmon, W. H. (2005). Building the data warehouse. John wiley & sons.

Jin, D. H., & Kim, H. J. (2018). Integrated Understanding of Big Data, Big Data Analysis, and Business Intelligence: A Case Study of Logistics. *Sustainability, 10(10),* 3778. https://doi.org/10.3390/su10103778.

Kashkul, H. M. A., & Falih, A. A. (2023). Organizational diplomacy and its role in enhancing distinguished university performance: An applied study at Warith Al-Anbiyaa University as a model. *Warith Scientific Journal,* 5(May), 403–415.

Kashkul, H. M. A., & Hashim, D. H. D. (2023). The role of creative leadership in enhancing organizational trust in educational institutions: An applied study at Warith Al-Anbiyaa University and Al-Zahraa University. Warith *Scientific Journal,* 5(May), 294–301.

Khan, M. A., Rahman, M. M., & Alharbi, F. (2025). Business Intelligence Systems and Organizational Decision Support: A Contemporary Review. *International Journal of Information Systems and Management, 14(1),* 1–15.

Kimball, R., & Ross, M. (2013). The data warehouse toolkit: The definitive guide to dimensional modeling. John Wiley & Sons.

Malik, F. S., & Terzidis, O. (2026). The metamorphosis of organizational resilience: A strategic roadmap for SMEs in the digital age. *Review of Managerial Science.* https://doi.org/10.1007/s11846-026-01002-3.

Mekimah, S., Zighed, R., Mili, K., & Bengana, I. (2025). Business intelligence in organizational decision-making: A bibliometric analysis of research trends and gaps (2014–2024). *Discover Sustainability, 5,* 532. Springer. https://doi.org/10.1007/s43621-024-00692-7.

Mendy, J., Conz, E., & Rigotti, T. (2026). Managing recovery and resilience in organizations: The impact of employee competence and development on firm recovery – A multidimensional conceptualization. *Management Decision, 64(5),* 1693–1704. https://doi.org/10.1108/MD-05-2026-491.

Mohammed, C. B., Wali, A. I., & Al Taee, M. A. H. (2025). The Role of Organizational Agility in Achieving Strategic Recovery: An Analytical Study of the Opinions of a Sample of Private Bank Managers in Erbil. *Sulicihan Journal for Science and Culture, 9(1).* https://doi.org/10.25098/9.1.20.

Mohammed, M. A., & Al Murad, N. Y. M. (2023). Business Intelligence and its Role in Achieving Sustainable Performance. NTU Journal for Administrative and Human Sciences (JAHS), 3(1), p. 105. *NTU Journal for Administrative and Human Sciences.*

Mohammed, M. A., & Muhammad, N. Y. (2023). Diagnosing the dimensions of business

intelligence: An exploratory study of the opinions of a sample of administrative leaders in Asiacell Telecom in Iraq. *Tikrit Journal of Administrative and Economic Sciences, 18(59),* 178–195. https://doi.org/10.25130/tjaes.18.59.2.14.

Negash, S. (2004). Business Intelligence. Communications of the Association for Information Systems, 13(1), 177–195. https://doi.org/10.17705/1CAIS.01315.

Pancić, M., Ćućić, D., & Serdarušić, H. (2023). Business Intelligence (BI) in Firm Performance: Role of Big Data Analytics and Blockchain Technology. Economies, 11(3), 99. https://doi.org/10.3390/economies11030099,

Silva Zierz, O. I., & Lordsleem Junior, A. C. (2026). Business Intelligence Tools in Organizations with a Focus on Power BI Applications in Civil Construction: A Systematic Literature Review. *Buildings, 16(4),* 869. https://doi.org/10.3390/buildings16040869 .

Turban, E., Sharda, R., Aronson, J. E., & King, D. (2008). Business intelligence: A managerial approach.

Wamba, S. F., Gunasekaran, A., Akter, S., Ren, S. J., Dubey, R., & Childe, S. J. (2020). Business intelligence and organizational performance. *Business Process Management Journal, 26(6),* 1709–1730. https://doi.org/10.1108/BPMJ-08-2019-0342

Wenzel, M., Stanske, S., & Lieberman, M. B. (2020). Strategic responses to crisis. *Strategic Management Journal, 41(7–8),* V7–V18. https://doi.org/10.1002/smj.3161.