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# The extent to which the implementation of the responsibility centers accounting system contributes to achieving a competitive advantage

From the point of view of :In the Libyan Islamic Bank  
Bank employees

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## ABSTRACT

This study aimed to examine the extent to which the implementation of a responsibility center accounting system contributes to achieving a competitive advantage at the Libyan Islamic Bank, considering its dimensions of cost centers, profitability, investment, and revenue, from the point of view of Bank employees. A descriptive-analytical approach was employed, utilizing a comprehensive survey of the study population, which comprised 40 employees in the bank's general management. Following data screening, 35 questionnaires were deemed valid for analysis. Data were analyzed using SPSS (version 25) with statistical techniques including frequencies, percentages, means, standard deviations, and a one-sample t-test. The results of the study showed that all dimensions of responsibility accounting represented by cost, profitability, investment, and revenue centers contribute significantly to enhancing the competitive advantage of the Libyan Islamic Bank.

● **Keywords:** Cost Center - Profit Center - Investment Center - Revenue Center

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# مدى مساهمة تطبيق نظام محاسبة مراكز المسؤولية في تحقيق الميزة التنافسية في المصرف الإسلامي الليبي؛

## من وجهة نظر العاملين بالمصرف

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### ■ ملخص البحث

هدفت هذه الدراسة إلى التعرف على مدى مساهمة تطبيق نظام محاسبة مراكز المسؤولية في تحقيق الميزة التنافسية في المصرف الإسلامي الليبي، من خلال أبعاده المتمثلة في مراكز التكلفة، والربحية، والاستثمار، والإيرادات من وجهة نظر العاملين بالمصرف. وقد استخدمت الدراسة المنهج الوصفي التحليلي، واعتمدت أسلوب المسح الشامل لمجتمع الدراسة المكوّن من العاملين بالإدارة العامة للمصرف والبالغ عددهم 40 موظف وبعد عملية الفرز بلغ عدد الاستبانات الصالحة للتحليل 35 استبانة، تم تحليلها باستخدام البرنامج الإحصائي SPSS (الإصدار 25)، بالاعتماد على عدد من الأساليب الإحصائية مثل التكرارات، والنسب المئوية، والمتوسطات الحسابية، والانحرافات المعيارية، واختبار (t) لعينة واحدة. وأظهرت نتائج الدراسة أن جميع أبعاد محاسبة المسؤولية المتمثلة في مراكز التكلفة، والربحية، والاستثمار، والإيرادات تسهم بشكل كبير في تعزيز الميزة التنافسية في المصرف الإسلامي الليبي.

● الكلمات المفتاحية: مركز التكلفة - مركز الربحية - مركز الاستثمار - مركز الإيرادات

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## **1.Introduction:**

Responsibility accounting represents a fundamental managerial tool for monitoring organizational performance and assessing actual operations against planned objectives. It enables the analysis of deviations from predetermined goals to implement corrective actions, while also providing a reliable framework for evaluating employee performance. In doing so, responsibility accounting contributes to strengthening competitive advantage, enhancing quality, reducing costs, and ensuring timely delivery. These aspects are particularly critical for economic and financial institutions that rely on the subdivision of activities into responsibility centers (Hadam, 2024).

### **1.1 Research Problem:**

Competitive advantage is a key factor in organizational success. Previous empirical studies have demonstrated the important role of responsibility accounting in enhancing this advantage. Alter et al. (2021) and Al-Aqab (2018) indicated that implementing responsibility accounting systems positively contributes to achieving competitive advantage and is closely linked to cost leadership strategies. Responsibility accounting also contributes to effective cost control and revenue enhancement, positively impacting the financial and operational performance of organizations.

A review of the Islamic Bank's annual periodic reports reveals that the responsibility accounting system is implemented within a clear organizational structure that defines the tasks and responsibilities of each unit (responsibility centers). Given the bank's adoption of this system, the need arose to examine its contribution to achieving competitive advantage.

Therefore, the research problem lies in answering the main question: To what extent does the implementation of the responsibility accounting system contribute to achieving competitive advantage in the Libyan Islamic Bank?

To answer this main question, the following sub-questions are formulated:

What extent does the implementation of responsibility accounting with

respect to the cost center contribute to achieving competitive advantage in Libyan Islamic Bank? What extent does the implementation of responsibility accounting with respect to the profit center contribute to achieving competitive advantage in Libyan Islamic Bank?

What extent does the implementation of responsibility accounting with respect to the investment center contribute to achieving competitive advantage in Libyan Islamic Bank?

What extent does the implementation of responsibility accounting with respect to the revenue center contribute to achieving competitive advantage in Libyan Islamic Bank?

### **1.2 Objectives of the study:**

The primary objective of this study is to examine the contribution of accounting responsibility to achieve competitive advantage in Libyan Islamic Bank.

This objective can be broken down into the following sub-objectives:

To evaluate the contribution of accounting responsibility in relation to the cost center toward achieving competitive advantage in Libyan Islamic Bank.

To evaluate the contribution of accounting responsibility in relation to the profit center towards achieving competitive advantage in Libyan Islamic Bank.

To evaluate the contribution of accounting responsibility in relation to the investment center toward achieving competitive advantage in Libyan Islamic Bank.

To evaluate the contribution of accounting responsibility in relation to the revenue center toward achieving competitive advantage in Libyan Islamic Bank.

### **1.3 Research hypotheses:**

To achieve these objectives, the study is guided by the following main

hypothesis: The implementation of responsible accounting contributes significantly to achieving competitive advantage in Libyan Islamic Bank.

From this hypothesis, the following sub-hypotheses are derived:

- 1.The implementation of responsibility accounting with respect to the cost center significantly contributes to achieving competitive advantage in Libyan Islamic Bank.
- 2.The implementation of responsibility accounting with respect to the profit center significantly contributes to achieving competitive advantage in Libyan Islamic Bank.
3. The implementation of responsibility accounting with respect to the investment center significantly contributes to achieving competitive advantage in Libyan Islamic Bank.
- 4.The implementation of responsibility accounting with respect to the revenue center significantly contributes to achieving competitive advantage in Libyan Islamic Bank.

#### **1.4 Significance of the Study:**

The significance of this study arises from the importance of the subject it addresses, namely, the extent to which responsibility accounting contributes to achieving competitive advantage within banking institutions. Its importance also lies in enriching the Libyan and Arab libraries with a new scientific reference that may benefit researchers and those interested in the fields of managerial accounting and competitive advantage. Moreover, the expected findings of this study may provide practical value to decision-makers at Libyan Islamic Bank by offering insights and recommendations that support performance improvement and enhance the bank's competitive capability.

#### **1.5 Scop of the study:**

This study focused on measuring the contribution of implementing a responsibility accounting system to achieving competitive advantage from the point of view of Libyan Islamic Bank employees. The study period

extended from 1, May, 2025, to 1, October, 2025. The focus was on the four main dimensions of the responsibility accounting system: cost center, profit center, investment center, and revenue center. These dimensions were chosen because they are the most common and widely used in academic studies, with many researchers in accounting literature citing them as a basis for classifying organizational units and distributing responsibilities. They represent an integrated framework for evaluating financial and operational performance, enabling management to monitor costs, achieve profits, improve resource investment efficiency, and maximize revenues, thus making them the standard reference for implementing responsibility accounting.

### **1.6 Reasons for Selecting the Libyan Islamic Bank as the Case Study:**

The selection of the Libyan Islamic Bank as the case study emerged naturally from several interconnected considerations. Being one of the relatively recent adopters of Islamic banking practices in Libya, the bank provides a dynamic environment where modern management and accounting methods, such as responsibility accounting, are still evolving.. This creates an opportunity to observe how these systems are introduced, adapted, and integrated within an evolving Islamic financial framework. At the same time, competition among Libyan banks has been steadily increasing, pushing institutions to improve efficiency and service quality. The Libyan Islamic Bank is no exception; its pursuit of better performance makes it an ideal setting to explore how responsibility accounting can enhance competitiveness and support strategic decision-making. Furthermore, despite the growing body of accounting literature and the numerous studies that have explored responsibility accounting in various banking environments, the Libyan context still lacks focused research on this topic within Islamic banks. This gap becomes evident to any researcher examining the field, as limited attention has been given to how responsibility accounting is applied in Libyan Islamic financial institutions and how it influences performance and decision-making. This absence highlights the significance of the current study, which not only introduces the topic but also aims to fill a substantial gap in local

academic knowledge, offering a meaningful contribution to the development of research in this specialized area.

### **1.7 Previous Studies:**

The study by Altair et al. (2021) aimed to identify the role that responsibility accounting can play in improving financial performance through competitive advantage. The study employed a descriptive and analytical approach, utilizing a questionnaire to gather the opinions of the study sample, which comprised accountants and auditors working in the Libyan city of Misrata. The study reached several conclusions, most notably the impact of applying responsibility accounting on competitive advantage, and that the application of responsibility accounting mechanisms has an influential, positive, and indirect relationship with financial performance through competitive advantage, in addition to their direct relationship.

The study by Maharat and Jarmouni (2019) also addressed the importance of accounting as an ethical approach to achieving competitive advantage. The study relied on both descriptive and analytical approaches. It reached several results, most notably: the more accountants adhere to ethical obligations, the more they prepare financial statements that gain the trust of the public and beneficiaries, thereby giving them a competitive advantage. Business ethics help organizations achieve their goals, particularly by increasing profits and enhancing reputation in industrial and commercial circles, thus supporting competitive advantage.

Haddam and Halil's study (2024) explored the impact of the value chain costing approach on achieving competitive advantage. To achieve the study's objectives, the following hypothesis was tested: the value chain costing approach affects competitive advantage. The study used a descriptive-analytical approach in the applied aspect, which is consistent with the nature and variables of the study. It reached a set of conclusions, including: reengineering administrative processes has a positive impact on supporting competitiveness, while continuous improvement has no significant impact on

achieving competitive advantage.

The study by Adam (2023) identified the impact of the responsibility accounting system on increasing revenues in diagnostic centers, as well as tested the extent of its effect on the efficiency of managing the facility's assets. The study relied on several approaches, including the historical, deductive, descriptive-analytical, and inductive approaches. A questionnaire was used to collect the opinions of the study sample, which included accountants, auditors, financial managers, and others involved in the research topic at the advanced diagnostic center. The study concluded that the responsibility accounting system helps control costs and increase facility revenues. Preparing reports for each responsibility center helps provide accurate information about the organization's assets. responsibility accounting also contributes to the optimal and efficient utilization of a company's assets.

Amara's study (2020) examined the availability of the components for implementing a responsibility accounting system in commercial banks operating in Libya. This was accomplished by surveying a sample of employees at Jumhouria Bank in the western region of Libya. A questionnaire was used that included five dimensions representing the components of the responsibility accounting system. The Statistical Package for the Social Sciences (SPSS) program was used to conduct statistical tests, and measures of central tendency, represented by the arithmetic mean, standard deviation, and relative weight, were used to analyze the data. The results of the study demonstrated the lack of components for implementing a comprehensive responsibility accounting system at Jumhouria Bank.

Alqamoudi's study (2024) also addressed the concept of responsibility accounting and its applications in Libyan Islamic banks (a case study of Al-Yaqeen Bank). The study employed a descriptive-analytical approach, utilizing the SPSS statistical software to describe the phenomenon and analyze its data. The study concluded that employees in the Libyan Islamic banks under investigation are aware of the concept of responsibility accounting, and that these banks possess qualified accounting staff with a sufficient understanding



of responsibility accounting principles.

This study differs from previous research by focusing on the extent to which implementing the responsibility center accounting system contributes to achieving a competitive advantage at Libyan Islamic Bank. Unlike earlier studies, it examines this relationship within the context of Libyan Islamic banking, which has not been previously explored in this way. The study is also distinguished by its applied and field-based approach, linking different types of responsibility centers (cost, profit, investment, and revenue) with the dimensions of competitive advantage. Thus, it helps fill a research gap in prior literature, which mainly addressed other sectors or focused on theoretical aspects only.

## **2. Literature Review:**

**2.1 The Concept of Responsibility Accounting:** There are many definitions of the concept of responsibility accounting, the most prominent of which is what Samara (2021) refers to as: “The division of responsibilities within an organization with the aim of increasing the capacity for oversight and evaluation, monitoring the locations of errors, and identifying those responsible for them, while enhancing the organization’s ability to measure performance more accurately and effectively. It is an accounting system based on collecting and summarizing accounting data related to the responsibilities of individual managers” (p. 10).

Accordingly, responsibility accounting can be viewed as an accounting system that aims to monitor and evaluate performance by linking responsibility for costs, revenues, investments, and profitability to different administrative levels. This is achieved by dividing the organization into specific responsibility centers and delegating authority to ensure accountability in light of the powers granted.

**2.2 Objectives of the Responsibility Accounting System:** The responsibility accounting system aims to achieve a set of objectives, the most important of which are (Alaqab, 2018):

1. Establishing a direct relationship between costs, revenues, and the individuals responsible for them, based on the ability to monitor and control these elements.
2. Evaluating the performance of each responsibility center separately.
3. Enhancing the independent accountability of each responsibility center to ensure transparency.
4. Assisting in evaluating the performance of the organization as a whole, by compiling the results of the various responsibility centers.

**2.3 Types of Responsibility Centers:** An organization can be divided into four main types of responsibility centers, with each center responsible for a specific aspect, as follows (Haddam & Halil, 2024):

1. Cost center (Expenditure): Its manager's responsibility is limited to monitoring inputs (costs) only, without being responsible for outputs (revenues).
2. Revenue center: Its manager's role is limited to monitoring the revenues subject to his direct control.
3. Profit Center: Its manager is responsible for both inputs (costs) and outputs (revenues), and thus for generating profits.
4. Investment Center: Its manager's authority extends to include costs and revenues, in addition to investment decisions related to the size of invested assets and the renewal or replacement of machinery.

**2.4 The Concept of Competitive Advantage:** There are many definitions of competitive advantage. Qureshi et al. (2019) defined it as: "An organization's ability to provide distinctive, high-quality products at the lowest possible cost, and deliver them to customers on time, relying on its resources and capabilities that distinguish it from other competitors" (p. 48).

Samara (2021) also indicated that competitive advantage represents an organization's position in the market, whether in terms of building, protecting, or developing it. This requires defining this position not only at the level of the market

as a whole, but also at the level of the targeted market segments, by developing marketing and sales activities that are compatible with the nature of each segment.

While Kahil (2016) defined it as: “An element of superiority that an organization can achieve by adopting certain competitive strategies, placing it in a better position than its competitors to exploit external opportunities or confront threats, in a manner that is difficult for others to imitate” (p. 31).

**2.5 The Importance of Competitive Advantage:** The importance of competitive advantage for an organization stems from the multiple benefits it provides, the most prominent of which are (Mohammed, 2022):

First: Enabling the organization to achieve qualitative and quantitative superiority over competitors and achieve outstanding performance.

Second: Raising the level of organizational performance and increasing the value provided to customers.

Third: Improving the organization’s image in the eyes of customers and clients, motivating them to continue doing business with it.

Fourth: Ensuring the continuity and renewal of the competitive advantage, allowing it to keep pace with developments over the long term.

Fifth: Competitive advantage relies on the organization’s resources and internal efficiency, which adds dynamism and vitality to its various operations.

## **2.6 Theories related to the study:**

1. **Responsibility Accounting Theory:** Responsibility Accounting Theory constitutes the primary theoretical foundation of this study, emphasizing the allocation of financial and managerial responsibilities to specific organizational units and the evaluation of their performance. This theory enables managers to monitor costs, revenues, and outcomes for each responsibility center, thereby facilitating corrective actions and enhancing operational efficiency. Implementing this theory in financial banks, to achieve a competitive advantage through effective financial performance and waste reduction (Horngren, Datar, & Rajan, 2018).

2. **Agency Theory:** Agency Theory focuses on the relationship between principals (owners) and agents (managers), highlighting the need for control and accountability mechanisms to mitigate conflicts of interest. Within this framework, responsibility accounting serves as a crucial tool to ensure that managers' decisions align with the bank's strategic objectives by holding each manager accountable for the performance of their respective responsibility center and incentivizing improved outcomes (Jensen & Meckling, 1976).
3. **Management Control Theory:** Management Control Theory posits that well-designed control systems enable organizations to achieve their strategic objectives effectively. Responsibility accounting functions as an integrated control mechanism that compares actual performance with planned targets, identifies deviations, and facilitates timely corrective measures, thus enhancing operational efficiency and financial optimization (Anthony & Govindarajan, 2007).
4. **Decentralization Theory:** Decentralization Theory emphasizes the distribution of authority and responsibility across independent organizational units. Responsibility accounting allows each unit to assume accountability for its financial and managerial decisions, thereby improving internal effectiveness and enabling efficient management of performance centers. Such decentralization contributes to competitive advantage by accelerating decision-making processes and enhancing the performance of individual units (Otley, 1980).

### **3. Research Methodology:**

**3.1 Population and Sample:** The study employed a census survey approach, targeting the entire population of employees involved in responsibility centers at the Libyan Islamic Bank, totaling 40 employees. However, 5 questionnaires were excluded due to being unsuitable for analysis, resulting in 35 usable questionnaires, which allows for reliable analysis and generalization of the results to the majority of the study population.

**3.2 Applied Study Methodology:** The study methodology and procedures constitute the main focus through which the applied aspect of the study is accomplished. Through this approach, the required information is obtained, and statistical analysis is conducted to arrive at results that are interpreted in light of the study literature related to the subject of the study, thus achieving the objectives the study seeks to achieve. In this context, the descriptive analytical approach was used, which relies on studying existing events, phenomena, and practices available for study and measurement as they are, without compromising their course.

**3.3 Data Collection Tool:** The study relied on a questionnaire to obtain data to help test the study hypotheses related to the subject of the study. The questionnaire was distributed directly to the sample of respondents. (40) questionnaires were distributed to the study community, and all were returned in full. Upon examination, (5) questionnaires were excluded due to lack of objectivity, leaving (35) questionnaires, representing (87.5%) of the total distributed questionnaires. The questionnaire includes the following main groups of questions:

The first group includes personal data of the study participants, including academic qualifications, specialization, job title, and years of experience.

The second group includes (3) main dimensions to measure the extent to which the implementation of the responsibility center accounting system contributed to achieving competitive advantage at Libyan Islamic Bank. The first dimension (cost center) contains (5) items, the second dimension (profit center) contains (6) items, the third dimension (investment center) contains (5) items, and the fourth dimension (revenue center) contains (5) items, for a total of (21) items for the full model.

The period length used was 0.8, and the period length was calculated based on dividing 4 by 5. The researchers used a (95%) confidence level for the tests, meaning the probability of error is equal to (5%).

**Table No. (1): Length of scale cells**

Answer direction	Average
Strongly disagree	1.79 - 1
Disagree	2.59 -1.8
Neutral	3.39-2.6
Agree	4.19 - 3.4
Strongly agree	5 – 4.2

After completing the distribution of the questionnaire, the data were initially collected, classified, and evaluated, with the aim of converting them into quantitative data in preparation for appropriate statistical analyses.

**3.4 Data Analysis Program Used:** To arrive at valuable inferences and indicators that support the study topic, and in accordance with the study's objectives, questions, and hypotheses, and based on the scientific methodology and the type of data to be analyzed, the researcher relied on SPSS version 22 (Statistical Package for the Social Sciences) to analyze the data, calculate averages, conduct descriptive statistics, and verify the assumption of collinearity for the study dimensions. The data was entered into a computer after being coded. The necessary statistical operations were performed to analyze the data using the statistical program, the Statistical Package for the Social Sciences (SPSS), to answer the study's questions or verify its hypotheses at a significance level of 0.05, which is generally considered an acceptable level in the social and human sciences. Since we sometimes need to calculate certain indicators that can be relied upon to describe the phenomenon in terms of the value that mediates or tends toward values, and in terms of identifying the degree of homogeneity of the values taken by the variable, as well as whether there are outliers or not, relying on graphical presentation alone is not sufficient. Therefore, we need to present

some statistical measures through which we can identify the characteristics of the phenomenon under study, as well as the possibility of comparing two or more phenomena. Among the most important of these measures are measures of central tendency and dispersion. The following were used:

- Frequency distributions: To determine the number of frequencies and the percentage of frequencies obtained by each answer relative to the total frequencies. This helps determine the relative importance of each answer and provides a preliminary picture of the study population's responses to various statements.
- Cronbach's alpha coefficient: To ensure the consistency of the respondents' responses regarding the study variables.
- Correlation coefficient: To determine the relationship between each of the questionnaire's axes.
- Weighted arithmetic mean: To determine the direction of the response for each statement of the scale, according to a five-point scale.
- Standard deviation: The standard deviation is used to measure the dispersion of responses and the extent of their deviation from their arithmetic mean.
- Pearson's correlation coefficient: To determine the relationship between each questionnaire statement and its overall axis, as well as to determine the relationship between each axis and the questionnaire's overall score.
- T-test (One Sample T-test): To determine the significance of the differences between the average response and the average measurement (3) in the five-point scale.

#### **4. The practical part of the study:**

##### **4.1 The bank's origins and organizational structure:**

The Libyan Islamic Bank is a leading financial institution established in 2017, operating in accordance with the principles of Islamic Sharia to provide

integrated banking and financing services (such as Murabaha, Musharaka and Ijara) in Libya, with the aim of contributing to the rebuilding of the economy through innovative products that meet the needs of customers in personal and corporate finance, while adhering to modern Sharia and technical standards.

The bank comprises the following main departments and services:

Retail Banking: Accounts, financing, and other services for individuals-  
 Corporate Banking: Financing and investment solutions for institutions and companies - International Banking: Facilities for international bank accounts and transactions - Electronic services - Supporting Departments and Units: These include Human Resources, Training, Internal Audit, Compliance, Risk , and others.

**4.2 Normal distribution of data:** In order to conduct the statistical analysis of the data in an appropriate manner, it is necessary to know that this data follows a normal distribution so that the appropriate tests can be chosen for it. This test was conducted and information was obtained that confirms that the study data follows a normal distribution for several indicators, the most important of which is the Klomogoro-Shamirnov index, as shown in the following table, where we find that Sig 0.081, which is more than 0.05, and this is an indication that the questionnaire data is distributed normally and is sound for statistical analysis.

**Table No. (2): Normal distribution test**

The extent to which the implementation of the responsibility center accounting system contributes to achieving a competitive advantage at Libyan Islamic Bank	Kolmogorov-Smirnova		
	Statistic	df	Sig.
	.114	35	0.090



**4.3 Characteristics of the Study Population:** The demographic background of the field study population is based on calculating frequencies and percentages of personal variables using the statistical program (SPSS). The following tables and figures illustrate the analysis of the basic data of the study participants, noting that the number of participants reached (35).

**4.3.1 Academic Qualification:** The results showed that (2) of the respondents, representing (5.7%), hold a master's degree, (29) respondents, representing (82.8%), hold a university degree, (2) of the respondents, representing (5.7%), hold a higher diploma, and (2) of the respondents, representing (5.7%), hold another qualification, as shown in the following table:

**Table No. (3): Distribution of sample members according to academic qualification**

Academic Qualification	Frequency	percentage
Master's	02	5.7%
Bachelor's	29	82.8 %
Higher Diploma	02	5.7%
Other Qualification	02	5.7%
Total	35	100%

**4.3.2 Scientific specialization:** The results showed that (22) respondents, representing (62.8%), specialized in accounting, (10) respondents, representing (25.7%), specialized in business administration, one respondent, representing (8.5%), specialized in finance and banking, and one respondent, representing (3%), specialized in computers. This is shown in the following table:

**Table No. (4): Distribution of eye organs according to scientific specialization**

Scientific specialization	Frequency	percentage
Accounting	22	62.8 %
Business Administration	09	25.7%
Finance and Banking	03	8.5%
Computer Science	01	03%
Total	35	100%

**4.3.3 Job Type:** The results showed that (3) respondents, representing (8.57%) of the sample, were office managers, (7) respondents, representing (20%) of the sample, were department heads, and (25) respondents, representing (71.43%) of the sample, were employees. This is illustrated in the following table:

**Table No. (5): Distribution of sample members according to job type**

Job Type	Frequency	percentage
Office Manager	3	8.57%
Department Head	7	20%
Employees	25	71.43%
Total	35	100%

**4.3.4 Years of experience:** The results revealed that (08) respondents, representing (22.8%), have 5 years of experience or less, (06) respondent, representing (17.4%), have 5 to less than 10 years of experience, (09) respondents, representing (25.6%), have 10 to less than 15 years of experience, and (12) respondents, representing (34.2%), have 15 to less than 20 years of experience. This is illustrated in the following table:

**Table No. (6): Distribution of sample members according to years of experience**

years of experience	Frequency	percentage
Less than 5 years	08	22.8%
5 to less than 10 years	06	17.4%
10 to less than 15 years	09	25.6%
15 to less than 20 years	12	34.2%
	35	100%

From the above, it is clear that the majority of the targeted respondents hold university qualifications, are specialists in the subject of study, and have extensive experience. These indicators are positive, confirming the target respondents' ability to understand the purpose of the questionnaire and the questions included in it, given that they had previously used the questionnaire as a source of data during their university studies, and have extensive work experience and positions as office managers, department heads, and employees.

#### **4.4 Data Analysis:**

##### **4.4.1 Preliminary Data Analysis:**

**1. Reliability Analysis Using Cronbach's Alpha:** The researcher relied on a pilot study to extract internal consistency reliability using the Cronbach's Alpha equation. Cronbach's Alpha is used to verify the strength of the correlation between questionnaire items. The acceptable reliability coefficient should be 0.70 or above. The closer it is to one, the stronger the internal correlation and coherence between the study variables (Hair, 2010). The researcher verified the questionnaire's reliability by calculating Cronbach's Alpha for the study's dimensions. The overall reliability of the questionnaire's dimensions reached 0.804, which is considered a good reliability coefficient and completely appropriate for the study's purposes. The researcher also calculated

Cronbach's Alpha for each study area separately and found that Cronbach's Alpha for the items measuring the study variables ranged between 0.728 and 0.83. These are excellent reliability coefficients and a good indicator of the questionnaire's coherence and the interconnectedness of its items, as illustrated in the following table:

**Table No. (7): Cronbach's alpha coefficient for the study dimensions**

Dimensions	Items Number	Cronbach's alpha value for the dimensions
Implementing a responsibility center accounting system for the cost center contributes to achieving a competitive advantage at Libyan Islamic Bank.	5	0.766
Implementing a responsibility center accounting system for the profit center contributes to achieving a competitive advantage at Libyan Islamic Bank.	6	0.83
Implementing a responsibility center accounting system for the investment center contributes to achieving a competitive advantage at Libyan Islamic Bank.	5	0.728
Implementing a responsibility center accounting system for the revenue center contributes to achieving a competitive advantage at Libyan Islamic Bank.	5	0.892
The overall model	21	0.804

- 2. Validity of the structural consistency of the study dimensions (convergent validity):** First-order factor analysis aims to study the relationship between the variable and its respective dimensions, as well as between the dimension and the items that represent it. This is called loading. The relationship between the dimension and the items must be statistically significant if the saturation ratio is at least (.50). Anything less than that

should be deleted because it does not strongly represent the hypothetical factor in the modified main model. A saturation ratio of (.60) is considered good, and a ratio of (.70) or higher is considered ideal and high, confirming convergent validity. The following tables show the correlation coefficient of the study items with their respective dimensions :

**Table No.(8 (Correlation coefficient of the items of the first dimension with the overall mean of the first dimension**

Questionnaire items	Correlation coefficient	Statistical significance value
Determining the cost value for each responsibility center within a cost center contributes to creating a competitive advantage for the bank.	0.747**	.000
Utilizing the expertise of cost center employees to reduce costs contributes to creating a competitive advantage for the bank.	0.848**	.000
Ensuring sufficient time for the cost planning process contributes to creating a competitive advantage for the bank.	0.70**	.000
Effective control over the cost center contributes to creating a competitive advantage for the bank.	0.844**	.000
Utilizing responsibility centers to minimize variable service costs contributes to creating a competitive advantage for the bank.	0.842**	.000

**\*\*Values are statistically significant at a significance level of 0.05.**

Therefore, we conclude that the relationship between the items and the cost center dimension has a strong relationship, ranging between (0.70\*\* - 0.848\*\*).

**Table No. (9): Correlation coefficient of the items of the second dimension with the**

**overall mean of the second dimension**

Questionnaire items	Correlation coefficient	Statistical significance value
Leveraging responsibility centers in pricing products (services) contributes to creating a competitive advantage for the bank.	0.723**	.000
Clearly defining profit centers contributes to creating a competitive advantage for the bank.	0.821**	.000
Comparing the results of profit centers with each other contributes to creating a competitive advantage for the bank.	0.718**	.000
Establishing clear and easy criteria for evaluating the performance of a profit center based on the bank's activities contributes to creating a competitive advantage for the bank.	0.781**	.000
Preparing performance reports for each profit center separately for regulatory purposes contributes to creating a competitive advantage for the bank.	0.861**	.000
Determining the profitability value of each profit center relative to the total profit of the bank as a whole contributes to creating a competitive advantage for the bank.	0.840**	.000

**\*\* Values are statistically significant at the 0.05 significance level.**

Therefore, we conclude that the correlation of the items with the profit center is strong, ranging between 0.718\*\* - 0.861\*\*.

**Table No. (10): Correlation coefficient of the items of the third dimension with the overall mean of the third dimension**

Questionnaire items	Correlation coefficient	Statistical significance value
Measuring the actual performance of individual investment centers for the purpose of evaluating performance and deviations contributes to creating a competitive advantage for the bank.	0.715**	.000
Using various financial ratios to evaluate the performance of investment centers contributes to creating a competitive advantage for the bank.	0.833**	.000
Establishing clear and easy-to-understand criteria for evaluating investment center performance contributes to creating a competitive advantage for the bank.	0.876**	.000
Providing the investment center with databases that can be referred to when making decisions contributes to creating a competitive advantage for the bank.	0.996**	.000
Evaluating the performance of investment center employees contributes to creating a competitive advantage for the bank.	0.782**	.000

\*\* The values are statistically significant at the 0.05 significance level.

Therefore, we conclude that the correlation of the items with the investment center is strong, ranging between (0.765\*\* - 0.876\*\*).

**Table No. (11( Correlation coefficient of the items of the fourth dimension with the overall mean of the fourth dimension**

Questionnaire items	Correlation coefficient	Statistical significance value
Determining the value of each revenue center's revenue relative to the bank's total income contributes to creating a desire for the bank.	0.802**	.000
By pricing the services provided by the bank, revenue centers contribute to creating a desire for the bank.	0.771**	.000
By setting the services that the bank values, revenue centers contribute to creating a goal for the bank.	0.810**	.000
Evaluating the performance of revenue center employees contributes to creating a goal for the bank.	0.801**	.000
Rewarding revenue center heads, in the event of increased sales, contributes to creating a goal for the bank.	0.823**	.000

**\*\* Values are statistically significant at the significance level of 0.05.**

Therefore, we conclude that the correlation of the items with the revenue center is strong, ranging between (0.771\*\*- 0.823\*\*).

**4.4.2 Testing the Study Hypotheses:**

To test the hypotheses, the (one-sample t-test) will be used. The total dimension level is high if the value of statistical significance is less than 0.05, and the value of the average response to the total dimension is more than the value of the average measurement (3), and the value of t is more than 1.96. The total dimension level is low if the value of statistical significance is more



than 0.05 and the value of the average response is less than the value of the average measurement (3), and the value of  $t$  is less than 1.96.

The following is a statement of the results of the statistical analysis of the study's hypotheses:

**First Hypothesis:** The implementation of the responsibility center accounting system with regard to the cost center contributes to achieving a competitive advantage at Libyan Islamic Bank.

**1. Descriptive Statistical Analysis:** The items related to the effectiveness of the first dimension of the study will be analyzed descriptively. This is evident from the weighted average for each element in the following table:

**Table No. (12): Analysis of the items of the first dimension: Cost center**

Questionnaire items	Weighted Average	Answer Direction
Determining the cost value for each responsibility center within a cost center contributes to creating a competitive advantage for the bank.	4.18	Agree
Utilizing the expertise of cost center employees to reduce costs contributes to creating a competitive advantage for the bank.	4.00	Agree
Ensuring sufficient time for the cost planning process contributes to creating a competitive advantage for the bank.	3.90	Agree
Effective control over the cost center contributes to creating a competitive advantage for the bank.	4.03	Agree
Utilizing responsibility centers to minimize variable service costs contributes to creating a competitive advantage for the bank.	4.12	Agree
The average	4.046	Agree

From the above, it can be concluded that the weighted average of the total items in the dimension (cost center) is equal to (4.046), which falls within the degree of agreement. This indicates the study sample's agreement with the total items in the dimension.

**2. Testing the hypothesis using a (One Sample T-test):** The results in the following table show that the average response rate is (4.046), which is more than the hypothetical average of the study population's opinion (3) at a statistical significance level (0.035) which is less than (0.05). Additionally, the calculated t-value (4.8) exceeds the tabulated value (1.96). This means that the implementation of the responsibility center accounting system with respect to the cost center contributes to achieving a competitive advantage at Libyan Islamic Bank.

**Table No. (13): One-sample t-test results for the first hypothesis**

Hypothesis	weighted average	P - value	Statistical value T-Test	Level
The application of the responsibility center accounting system with regard to the cost center contributes to achieving a competitive advantage at Libyan Islamic Bank.	4.046	0.035	4.8	High

Therefore, the first hypothesis is accepted: The implementation of the responsibility center accounting system with respect to the cost center contributes to achieving a competitive advantage at Libyan Islamic Bank.

**The second hypothesis:** The implementation of the responsibility center accounting system with respect to the profit center contributes to achieving a competitive advantage at Libyan Islamic Bank.

**1. Descriptive Statistical Analysis:** The items related to the effectiveness of the second dimension of the study will be analyzed descriptively. This is evident from the weighted average for each element in the following table:

**Table No. (14): Analysis of the items of the second dimensions: Profit center**

Questionnaire items	Weighted Average	Answer Direction
Leveraging responsibility centers in pricing products (services) contributes to creating a competitive advantage for the bank.	3.44	Agree
Clearly defining profit centers contributes to creating a competitive advantage for the bank.	4.00	Agree
Comparing the results of profit centers with each other contributes to creating a competitive advantage for the bank.	3.78	Agree
Establishing clear and easy criteria for evaluating the performance of a profit center based on the bank's activities contributes to creating a competitive advantage for the bank.	3.99	Agree
Preparing performance reports for each profit center separately for regulatory purposes contributes to creating a competitive advantage for the bank.	4.01	Agree
Determining the profitability value of each profit center relative to the total profit of the bank as a whole contributes to creating a competitive advantage for the bank.	4.14	Agree
The average	3.89	Agree

From the above, it can be concluded that the weighted average of the total items in the dimension (profit center) equals (3.89), which falls within the degree of agreement. This indicates the study sample's agreement with the total items in the dimension.

**2. Testing the hypothesis using a one-sample t-test:** The results in the following table showed that the average response was (3.89), which is more than the hypothetical average of the study population's opinion (3) at a statistical significance level (0.038) which is less than (0.05). Additionally, the calculated t-value (4.30) exceeds the tabulated value (1.96). This means that the implementation of the responsibility center accounting system with respect to the profit center contributes to achieving a competitive advantage at Libyan Islamic Bank.

**Table No. (15): One-sample t-test results for the second hypothesis**

Hypothesis	weighted average	P - value	Statistical value T-Test	Level
The implementation of the responsibility center accounting system with respect to the profit center contributes to achieving a competitive advantage at Libyan Islamic Bank.	3.89	0.038	4.30	High

Therefore, the second hypothesis is accepted: The implementation of the responsibility center accounting system with respect to the profit center contributes to achieving a competitive advantage at Libyan Islamic Bank.

**The third hypothesis:** The implementation of the responsibility center accounting system with respect to the investment center contributes to achieving a competitive advantage at Libyan Islamic Bank.

**1. Descriptive Statistical Analysis:** The items related to the effectiveness of the third dimension of the study will be analyzed descriptively. This is evident from the weighted average for each element in the following table:

**Table No. (16): Analysis of the items of the third dimension: Investment Center**

Questionnaire items	Weighted Average	Answer Direction
Measuring the actual performance of individual investment centers for the purpose of evaluating performance and deviations contributes to creating a competitive advantage for the bank.	4.21	Strongly agree
Using various financial ratios to evaluate the performance of investment centers contributes to creating a competitive advantage for the bank.	4.25	Strongly agree
Establishing clear and easy-to-understand criteria for evaluating investment center performance contributes to creating a competitive advantage for the bank.	4.17	Agree
Providing the investment center with databases that can be referred to when making decisions contributes to creating a competitive advantage for the bank.	4.30	Strongly Agree
Evaluating the performance of investment center employees contributes to creating a competitive advantage for the bank.	4.15	Agree
The average	4.216	Agree

From the above, it can be said that the weighted average of the total items in the dimension (investment center) equals (4.216), which falls within the degree of agreement. This indicates that the study sample agrees with the total items in the dimension.

**2. The hypothesis was tested using a One Sample T-test:** The results in the following table showed that the average response rate was (4.216), which is more than the hypothetical average of the study population's opinion (3) at a statistical significance level (0.010) which is less than (0.05). Additionally, the calculated t-value (5.03) exceeds the tabulated value (1.96). This means that the implementation of the responsibility center accounting system with regard to the investment center contributes to achieving a competitive advantage at Libyan Islamic Bank.

Table No. (17): One-sample t-test results for the third hypothesis

Hypothesis	weighted average	P - value	Statistical value T-Test	Level
The implementation of the responsibility center accounting system with regard to the investment center contributes to achieving a competitive advantage at Libyan Islamic Bank.	4.216	0.010	5.03	Very high

Therefore, the third hypothesis is accepted: The implementation of the responsibility center accounting system with respect to the investment center contributes to achieving a competitive advantage for the Libyan Islamic Bank.

**The fourth hypothesis:** The implementation of the responsibility center accounting system with respect to the revenue center contributes to achieving a competitive advantage for the Libyan Islamic Bank.

**1. Descriptive statistical analysis:** The items related to the effectiveness of the fourth dimension of the study will be analyzed descriptively. This is evident from the weighted average for each element in the following table:

Table No. (18): Analysis of the items of the fourth dimension: Revenue Center

Questionnaire items	Weighted Average	Answer Direction
Determining the value of each revenue center's revenue relative to the bank's total income contributes to creating a desire for the bank.	4.18	Agree
By pricing the services provided by the bank, revenue centers contribute to creating a desire for the bank.	4.10	Agree

Questionnaire items	Weighted Average	Answer Direction
By setting the services that the bank values, revenue centers contribute to creating a goal for the bank.	3.83	Agree
Evaluating the performance of revenue center employees contributes to creating a goal for the bank.	4.29	Strongly agree
Rewarding revenue center heads, in the event of increased sales, contributes to creating a goal for the bank.	4.32	Strongly agree
The average	4.14	Agree

From the above, it can be stated that the weighted average of the total items in the dimension (revenue center) is equal to (4.14), which falls within the degree of agreement. This indicates the study sample's agreement with the total items in the dimension.

**2. The hypothesis was tested using a One Sample T-test:** The results in the following table showed that the average response was (4.14), which is more than the hypothetical average of the study population's opinion (3) ) at a statistical significance level (0.012) which is less than (0.05). Additionally, the calculated t-value (5) exceeds the tabulated value (1.96). This means that the implementation of the responsibility center accounting system with respect to the revenue center contributes to achieving a competitive advantage at Libyan Islamic Bank.

**Table No. (19) (One-sample t-test results for the fourth hypothesis**

Hypothesis	weighted average	P - value	Statistical value T-Test	Level
The implementation of the responsibility center accounting system with respect to the revenue center contributes to achieving a competitive advantage at Libyan Islamic Bank.	4.14	0.012	5	Very high

Therefore, the third hypothesis is accepted, which states: The application of the responsibility center accounting system with regard to the revenue center contributes to achieving a competitive advantage at Libyan Islamic Bank.

**5.Discussion:** The results showed that the investment center ranked first and at a very high level in the contribution of applying the dimensions of the responsibility center accounting system to achieving competitive advantage at the Libyan Islamic Bank, with a mean score of (4.216) at a statistical significance level of (0.010) and a calculated t-value of (5.03). It was followed in second place and at a very high level by the revenue center, which contributed to achieving the Libyan Islamic Bank's competitive advantage with a mean score of (4.14) at a statistical significance level of (0.012) and a calculated t-value of (5). As for the cost center, it ranked third with a high level of contribution to achieving the competitive advantage of the Libyan Islamic Bank, with an average score (4.046) at a statistical significance level of (0.035) and a calculated t-value of (4.8). While the profitability center ranked fourth and showed a high level of contribution to achieving competitive advantage, with an average score of (0.038) and a calculated t-value of (4.30). The results of this study align with previous research regarding the role of responsibility accounting in achieving competitive advantage. Specifically, the findings indicate that implementing responsibility accounting at the Libyan Islamic Bank across cost centers, profit centers, investment centers, and revenue centers positively contributes to the realization of competitive advantage. This is consistent with Altair et al. (2021), who found that the implementation of responsibility accounting mechanisms has a significant and positive relationship with financial performance, both directly and through competitive advantage. Similarly, Adam (2023) confirmed that responsibility accounting supports effective cost control and enhances organizational revenue. Moreover, the preparation of reports for each responsibility center provides accurate information on the organization's assets and facilitates their optimal and efficient utilization. These results are also in line with key theoretical frameworks underpinning responsibility



accounting. Responsibility accounting theory provides the primary theoretical foundation for this study, while agency theory emphasizes its role in ensuring that managers' decisions align with strategic objectives. In addition, the theory of decentralization highlights how distributing authority and responsibility across independent organizational units can enhance competitive advantage by accelerating decision-making and improving the performance of individual units.

## **6. Conclusion:**

**6.1 Findings:** Based on this study, the following conclusions were drawn:

1. The implementation of the responsibility center accounting system with respect to the cost center at a high level contributes to achieving a competitive advantage at Libyan Islamic Bank.
2. The implementation of the responsibility center accounting system with respect to the profit center at a high level contributes to achieving a competitive advantage at Libyan Islamic Bank.
3. The implementation of the responsibility center accounting system with respect to the investment center at a very high level contributes to achieving a competitive advantage at Libyan Islamic Bank.
4. The implementation of the responsibility center accounting system with respect to the revenue center at a very high level contributes to achieving a competitive advantage at Libyan Islamic Bank.

**6.2 Recommendations:** After analyzing the data and arriving at its results, the study recommends the following:

1. The bank should further enhance the implementation of accountability centers across all organizational units to ensure accurate monitoring of financial and operational performance, thereby strengthening its competitive position in the market.
2. Advanced and practical training programs should be provided for managers and staff, focusing on performance analysis and the effective use of financial information in strategic decision-making.

3. Data from accountability centers should be utilized in short- and long-term strategic planning to ensure optimal resource utilization and maximize returns.
4. Advanced technological services should be developed to support accountability centers, facilitate data analysis, and provide accurate and timely information for informed decision-making.

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