

# IMPACT OF VERTICAL AND HORIZONTAL INTEGRATION BETWEEN STRATEGIC MANAGEMENT ACCOUNTING AND DECISION-MAKING ON REDUCING FINANCIAL FAILURES CASE OF JORDAN

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## ABSTRACT

*The study aims to measure the impact of vertical and horizontal integration between strategic management accounting (SMA) and operational and strategic decision-making on reducing financial failures in the companies listed in the Amman Stock Exchange (ASE). Vertical integration is represented in achieving integration between SMA and strategic decision-making, whereas horizontal integration lies in achieving integration between SMA, and operational decision-making.*

*Financial failure is measured by Kida model, while the vertical and horizontal integration between SMA, and operational and strategic decision-making is measured by a questionnaire which was distributed among a sample of 50 industrial companies randomly chosen. The study targets for its unit of analysis the company's general manager, production manager and financial manager among whom the questionnaire is distributed. One hundred and fifteen questionnaires (115) valid for analysis have been recovered, a percent recovery of approximately (76.7%).*

*The results of the study show that the adoption of vertical and horizontal integration between SMA and operational and strategic decision-making on reducing financial failures in the companies listed in the ASE is found in averaged levels, which may result in reducing the opportunity of achieving the benefits resulting from its application. The study also concludes that there is a positive impact of vertical and horizontal integration between SMA and operational and strategic decision-making on reducing financial failure of industrial companies listed in the ASE. The study recommends that Jordanian companies should place more interest in adopting more developed accounting methods and tools which shall boost vertical and horizontal integration between SMA and operational and strategic decision-making should they be interested in reducing financial failure and improving levels of performance.*

**Keywords:** Strategic Management Accounting, Financial Failures, Decision-Making.

## INTRODUCTION

Companies face and pass through their productive life various conditions and stages, permeated by periods of economic recession and revival, as well as cycles of prosperity and decline. Nonetheless, companies' managements are always striving to achieve growth in their resources, increase their revenues, reduce their costs, and thus increase their profits.

Companies face various risks that may affect its existence and pose as a barrier to its continuity in performing its various activities. This is known as financial distress. It happens when the company faces financial imbalance as a result of insufficient resources and incapability to

fulfill its obligations in the short term, where a mismatch between the company's internal and external resources, and its obligations in the short term occurs. This imbalance may be temporary and occasional, or real and permanent Azeez (2014).

Avots (1996) considers that managerial reasons is the common denominator in most distressed companies, where these companies cannot provide the necessary support to its employees, even those highly qualified. In recent years, significant changes have occurred in the management decision-making process at all levels (Woldron, 2005). Companies have started to shift from management accounting old practices to modern ones based on achieving vertical and horizontal integration between modern SMA and operational and strategic decision-making.

Many researchers consider that companies can achieve strategic success by achieving integration between the modern SMA and decision-making (Cadez & Guilding, 2012); Hammad et al (2010); Carr et al (2010); Trkman (2010)). This integration can be horizontal through the assistance SMA provide managers of operational and career management units in decision-making related to control and planning, while vertical integration is manifested through the provision of information by SMA to managers of strategic management units to assist them in the strategic decision-making process (Chenhall & Langfield-Smith, 1998).

The SMA includes the preparation and implementation of a range of policies, practices, methods, and tools that align with the internal and external strategic direction of the corporation at all organizational levels to ensure the provision of the necessary and appropriate information, thus achieving the goals and aspirations of the corporation as a whole. Oboh & Ajibolade (2017), concluded that Nigerian banks are practicing SMA; Not as concept, but as an operating principle, and also SMA effectively assists in the strategic decision-making process by improving competitive advantage and market share, and Doktoralina, & Apollo (2019) found that SMA practices had positive relationship with companies' profitability.

The relationship between strategic management and management accounting has gained much interest from management accounting researchers in the past two decades (Simons, 1987; Dent, 1990; Langfield-Smith, 1997 ; Ittner & Larcker, 1997; Chenhall & Langfield-Smith, 1998; Abernethy & Brownell, 1999; Nyamori et al, 2001; Chenhall, 2003; Henri, 2006; Naranjo-Gil & Hartmann, 2007; Roslender & Hart, 2010; Juras, 2014; Nixon & Burns, 2012; Otley, 2016). Accumulated evidence from these studies indicate that the high organizational performance results from connecting the management accounting system to the corporation's strategy or its strategic management. This is due to the preparation, design and practice of management accounting integrated with the corporation's strategy which contributes to increasing its capacity to respond to the surrounding environmental changes through improving its capability in obtaining the needed information that ensure making the appropriate strategic decisions. Recently, the primary purpose of the SMA has been formulated, which lies in providing the necessary information to create the corporation's strategy and boost its implementation areas through promoting practices consistent with the corporation's strategic direction, in line with adopting modern methods and tools to reduce costs, improve products' qualities and evaluate performance as a whole to achieve the corporation's performance and maintain its strategic position, as well as increase its capacity for continuity, survival and development in a rapidly changing environment (Cadez & Guilding, 2012).

Ghasemi et al (2019), found that managers in financial companies rely on MAS to improve their performance by applying modern techniques and methods and taking into account environmental and internal factors. Therefore, there was a need to develop management accounting methods that conform with the requirements of the current phase, most notably of these:

1. Activity Based Costing: It is a distribution system of indirect costing of products based on analyzing activities as individual since these are targeted to calculate the basic cost, resulting in shared services. It rounds up the costs of each activity separately, and uploads products as per its size of service consumption using costing engines RS & Atkinson, (1989).
2. Total Quality Management: The American Quality Institute has defined it as an integrated strategic management system that helps to achieve client satisfaction. The system includes managers and employers and uses quantitative methods to continuous development of the corporation`s business RS, & Atkinson, (1989).
3. Just in Time production system: It is considered one of the most important systems of modern production, working on reducing inventory in all its forms (raw materials, products under operation, and to fully products) or get rid of them permanently, and thus reduce associated costs and maximize profits by controlling the timing of the receipt of raw materials to coincide with the start of the production process, with the possibility to adjust the timing of the completion of the production in sync with the time of delivery or shipment to the customer (William, 2017).
4. Balanced Score Card: It A system that measures performance systematically through translating the corporation`s strategy into clear objectives and a number of appropriate measures that evaluate performance, in addition to providing a set of performance standards related to a number of activities and programs that ensure achieving such objectives. The corporation`s performance is measured through four perspectives: the financial perspective, customer`s satisfaction perspective, innovation perspective and learning and growth perspective (Wang, 2006).

Through a review of the four methods mentioned above, it is clear the pivotal role they play in achieving the next SMA benchmarks that will be based upon high degrees of vertical and horizontal integration.

## **Problem Statement**

Financial failure is one of the most important problems that companies face, especially with the increasing financial and economic crises, and the spread of the pandemic Covid 19, where management is the important element that determines whether financial failure is a temporary or permanent event. Therefore, achieving vertical or horizontal integration between SMA and operational and strategic decision-making might have a pivotal role and positive impact in reducing financial failure in industrial companies listed in the ASE.

The problem statement can be summarized in answering the following question:

What is the impact of vertical and horizontal integration between strategic, administrative accounting systems and operational and strategic decision-making on reducing financial failures in companies listed in the ASE.

## **Objectives of the Study**

The study aims to achieve the following objectives:

1. How far has the horizontal integration of SMA and operational decision-making been applied in the industrial companies listed in the ASE?
2. How far has the vertical integration of SMA and operational decision-making been applied in the industrial companies listed in the ASE?
3. What is the impact of vertical and horizontal integration between strategic, administrative accounting systems and operational and strategic decision-making on reducing financial failures in companies listed in the ASE.

## **Study Hypotheses**

The study aims to test the following hypotheses:

*Ho1: Industrial companies listed in the ASE do not apply vertical and horizontal integration between the SMA and operational and strategic decision-making.*

*Ho2: there is no statistically significant difference at the level of significance ( $\alpha \leq 0.05$ ) regarding the impact of the vertical and horizontal integration between the SMA and operational and strategic decision-making in reducing financial failure in the industrial companies listed in ASE.*

## METHODOLOGY

### Study Methodology and Limitations

This study followed the descriptive method and the field study. It is limited to industrial companies listed in the ASE. This unit of analysis has been chosen since it is the most appropriate to cover the study subject aspects, which addresses practices rooted in the organization under study (Aksoylu & Aykan, (2013).

### Study Population and Sample

The study population has consisted of the industrial companies listed in the ASE. A number of (50) industrial companies has been chosen randomly. The study has targeted, as its unit of analysis, the general manager, production manager and financial manager of the company, since they are best placed to identify the contexts of strategy related to management accounting. A questionnaire was distributed among 150 of them; (115) questionnaires valid for analysis have been recovered, a recovery percentage of (76.7%). Table 1 shows the distribution of the study sample (managers) based on their job characteristics.

	The variable	Repetition	Ratio%
Educational level	Community diploma or less	9	7.8
	Bachelor	78	67.8
	Postgraduate (MSc or PhD)	28	24.4
The number of years of experience in the current position	less than 5 years	6	5.2
	5- Less than 10 years	12	10.4
	10- Less than 15 years	54	47.0
	15 years and over	43	37.4

Table 1 indicates that (92.8%) of the managers in the study sample hold a bachelor degree or higher, and a rate (94.8%) of managers have experience in the current position, ranging from (10 years and over).

### Study Tool

The study has used the questionnaire as a major means of collecting primary data. It has comprised of three parts.

1. Part 1: It contains information on the job characteristics of the study sample.
2. Part 2: It measures the extent to which the horizontal integration of SMA and operational decision-making has been applied in the industrial companies listed in the ASE.
3. Part 3: It measures the extent to which the vertical integration of SMA and operational decision-making has been applied in the industrial companies listed in the ASE.

## Study Variables and Their Measurement

### First: Dependent Variable

Financial failure: Financial failure is measured using the Kida model, which relies on five financial ratios Azeez, K. (2014).

$$Z = 1.042X1 + 0.42X2 - 0.461X3 - 0.463X4 + 0.271X5$$

whereas

X1: Net Profit Before Taxes to Total Assets

X2: Total Equity to Liabilities

X3: Liquid Assets to Current Liabilities

X4: Revenue to Total Assets

X5: Cash to Total Assets

### Second: Independent Variables

1. Horizontal integration between SMA and the operational decision making. It is measured through the second part of the questionnaire.
2. Vertical integration between SMA and strategic decision-making, measured through Part III of the identification.

## STUDY RESULTS

### Reliability Test

To investigate the reliability of the vertical and horizontal integration between the SMA and operational and strategic decision-making, the researcher calculates the coefficient of internal consistency using coefficient Alpha Cronbach items for each variable of the study variables. Table 2 highlights the results of this test.

The variable	Nu. Questions	Alpha Cronbach
The horizontal integration	10	0.845
The vertical integration	10	0.876

Table 2 shows that alpha values are good, acceptable and indicative of the consistency of the study measurement and the internal consistency of the study axes.

### Results of The Descriptive Statistics of The Study Variables

Likert scale has been used, where results are distributed to low from (1-2.33), medium (2.34-3.67) and high (3.68-5).

Variable	Nu	Min value	High value	Mean	SD	Degree of application
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Horizontal integration	115	2.2	4	3.3	0.64	Medium
Vertical Integration	115	2.6	4.4	3.55	0.78	Medium
Horizontal and vertical integration together	115	2.4	4.2	3.42	0.7	Medium

Results of Table 3 indicates that the extent of application of the companies of the study sample to both horizontal and vertical integration, from the point of view of respondents, is medium, with an arithmetic mean of (3.42), the highest value (4.20), while the lowest value amounted to (2.40). Table (2) also shows that the company's application of the vertical and horizontal integration of SMA is medium, with an arithmetic mean of (3.30) and (3.55) respectively. This result is considered non-reassuring from a practical standpoint, as the application of accounting systems strategic is important and pivotal role in providing a framework of strategic information to major, medium and minor managements to help them in decision making, planning and control at the operational level aimed at implementing the company's strategic level. Moreover, applying modern SMA methods to a moderate degree, makes companies lose the opportunity of achieving the consequential benefits. The activity-based costing system is positively correlated with the performance improvement scope (Shields, 1995; Krumwiede, 1998; Cagwin & JBouwman, 2002; Khan & Huda, 2016), and the total quality management positively impacts companies' performance (Gharakhani et al., 2013). The balanced scored card has proved its ability to increase revenue, reduce costs and thus maximize profits of companies (Wang, 2006).

## Hypotheses Testing

### First: Testing the First Hypothesis

Testing results of the extent of applying vertical and horizontal integration between the SMA and operational and strategic decision-making by industrial companies listed in the ASE.

Variable	Mean	SD	Value of t	Statistical significance	Degree of application
Horizontal integration	3.3	0.64	4.977	0	Medium
Vertical Integration	3.55	0.78	7.563	0	Medium
Horizontal and vertical integration together	3.42	0.7	6.462	0	Medium

The study's first and second objective aims at identifying the extent to which industrial companies listed in the ASE apply the horizontal integration between SMA and operational decision-making, as well as identifying the extent to which industrial companies listed in the ASE apply the vertical integration between SMA and operational decision-making. To measure the degree of application, the One Sample T-test is used to test the hypothesis. Table 4 shows the most relevant results.

Results in Table 4 indicate that the degree of application of the industrial companies listed in ASE to both the vertical and horizontal integration is averaged, where the T value amounts to T (6.462), with a level of significance (0.000). The Table also shows that the application of industrial companies listed in the ASE to the vertical and horizontal integration is averaged, with a T value of (4.977) and (7.563) for both, with the level of significance (0.000) and (0.000) respectively.

## Second: Testing the Second Hypothesis

Results of testing the impact of the vertical and horizontal integration between strategic, administrative accounting systems and operational and strategic decision-making on reducing financial failures in companies listed in the ASE

Variable	$\beta$	Value of t	Statistical significance
Horizontal integration	1.352	5.422	0.000
Vertical Integration	0.751	3.026	0.003
Value of F	44.65	Statistical significance 0.000	
Coefficient of determination $R^2$	0.444	Modified Coefficient of $adjR^2$ 0.434	

Table 5 shows results of the multiple regression model of the study. Results show that F has reached (44.65) with a level of significance 0.000, which indicates a relationship between the study's independent variables and dependent variable. The table also shows that the value of  $adjR^2$  has reached (0.434), meaning that the independent variables in the study model explains (43.4%) of the variance in the financial failure of companies under study. The  $\beta$  values also indicate the direct correlation and impact size between the independent variables and dependent variable, where the vertical integration variable has the highest positive impact on reducing financial failure ( $\beta=1.325$ ), followed by the horizontal integration ( $\beta=0.751$ ). This may be due to the fact that operational managements rely on the validity of strategic management decisions and this result is consistent with (Khadash & Feridun, 2006; Shah et al., 2011; Ah Lay & Jusoh, 2011; Hammad et al, 2010; Trkman, 2010; Ahid & Augustine, 2012; Cadez & Guilding, 2012; Lay & Jusoh, 2015), indicating that the integration between management strategic systems and the corporation's strategy or strategic management contributes to boosting performance and thus reduces financial failure.

## CONCLUSION

The main findings and conclusions of this study can be highlighted as follows:

1. The current study relies on the responses of a group of managers in the industrial companies listed in ASE, most of them holding high qualifications and having good experience in the current position.
2. The results of the study show that the vertical and horizontal integration between the SMA and strategic and operational decision-making in the industrial companies listed in ASE is applied at averaged levels, which may result in losing the opportunity of achieving the benefits of its application.
3. The study concludes that there is a positive impact of the vertical and horizontal integration between strategic, administrative accounting systems and operational and strategic decision-making on reducing financial failures in companies listed in the ASE.

## RECOMMENDATIONS

In the light of the results of this study, the following recommendations are proposed:

1. The study recommends that Jordanian companies should place more interest in adopting more developed accounting methods and tools which shall boost vertical and horizontal integration between strategic,

administrative accounting systems and operational and strategic decision-making should they be interested in reducing financial failure and improving levels of performance.

2. The need to increase the involvement of management accountants in the formation of strategies, in addition to providing greater organizational, cultural and human capacity, that supports adopting modern methods and tools in management accounting.
3. The need to identify impediments to Jordanian industrial companies' adoption of the vertical and horizontal integration between the SMA and strategic and organizational decision-making, which eventually opens the door for future studies in the domain.

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