The Impact of Cost Accounting Techniques on the Financial Performance of Large Firms and Small and Medium Enterprises.

تأثير تقنيات محاسبة التكاليف على الأداء المالي للشركات الكبيرة والمنشآت الصغيرة والمتوسطة

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Abstract

The aim of this study is to investigate the effects of Cost Accounting Techniques on financial performance of both large firms and small & medium-sized enterprises (SMEs) in Egypt. This will be accomplished by analyzing the influence of marginal cost and absorption cost on both return on assets and net profit margin, and by tracing if there are any differences between the impacts on small and medium enterprises and large firms or not. An empirical study was conducted on both small and medium enterprises and large firms, and after collecting questionnaire results from those who work in small and medium enterprises and large firms, results from four hundred valid questionnaires for both SME's and large firms were thoroughly analyzed. The findings suggest that there is a direct impact of marginal cost and Absorption cost on both return on assets and net profit margin for both small and medium enterprises and large firms.

الملخص

هدف هذه الدراسة هو التحقيق في تأثير تقنيات محاسبة التكاليف على الأداء المالي للشركات الكبيرة والمؤسسات الصغيرة والمتوسطة (المشروعات الصغيرة والمتوسطة) في مصر. سيتم تحقيق ذلك عن طريق تحليل تأثير التكلفة الحدية والتكلفة الاستيعابية على عائد الأصول وهامش الربح الصافي، ومعرفة ما إذا كانت هناك أي اختلافات في التأثيرات على المشروعات الصغيرة والمتوسطة والشركات الكبيرة أم لا. تم إجراء دراسة تجريبية على المشروعات الصغيرة والمتوسطة والشركات الكبيرة، وبعد جمع نتائج الاستبيان من العاملين في المشروعات الصغيرة والمتوسطة والشركات الكبيرة، تم تحليل نتائج 400 استبيان صالح للمشروعات الصغيرة والمتوسطة والشركات الكبيرة بعناية. , والتأثير يختلف أساسا باختلاف حجم المخزون أو بنتيجة اتخاذ قرار محاسبي على أساس التكلفة المتغيرة فقط أو التكلفة الإجمالية. تشير النتائج إلى وجود تأثير مباشر للتكلفة الحدية والتكلفة الاستيعابية على عائد الأصول وهامش الربح الصافي لكل من المشروعات الصغيرة والمتوسطة والشركات الكبيرة.

الكلمات المفتاحية: تقنيات محاسبة، الشركات الكبيرة والمشروعات الصغيرة والمتوسطة، التكلفة الحدية، التكلفة الاستيعابية، عائد الأصول، هامش الربح الصافي.

Introduction

To maintain competitiveness in today's rapidly changing market, companies must be able to adapt to the conditions of rapid development and added information technologies, in addition to the dynamism of the external environment. An effective operation and management of cost is crucial for increasing the level of firm profitability and for improving its competitiveness (Gareche et al., 2019). This is why it is important to categorize cost management tools, so each tool can be used in the most effective way within different cost management methods (Aduda et al., 2020).

Hence, the main aim of this research is to identify the key components of cost management of cost management tools that lead to effective cost management. Moreover, the focus of this research is to enhance the functioning of the firm's cost management system by systematizing the tools based on the methods of cost management. The literature shows that the issue of determining the most effective tools of cost management system remains unresolved and further systematization of the interaction between cost management methods is needed to improve efficiency.

In other words, the solution to the problem is to find the optimal combination of methods and tools of cost management that will improve and develop the functional components efficiency of the cost management system, which will eventually lead to the increase in the competitiveness of firm products especially those based on cost optimization. This can be achieved by utilizing a range of cost management methods, including Activity-Based Cost (ABC), Direct Cost, Standard Cost, Absorption Cost, Cost-Volume-Profit (CVP) Analysis, Target Cost, Benchmarking, and Kaizen Cost.

Theoretical background

Cost Accounting involves collecting, analyzing, summarizing, and evaluating various alternatives of decisions. Its aim is to provide senior management with the most cost-effective and feasible course of action based on the company's capabilities. In addition, the business market environment has become more volatile in recent decades, making the effective management of firms more challenging (Makau et al., 2014).

Moreover, Small, and medium enterprises are seen as a very critical sector, as they not only generate significant employment but also contribute significantly to domestic and export revenues if it has been properly operated (Rao et al., 2021). Furthermore, Small, and medium enterprises are regarded as an important, key instrument to eliminate poverty, and their development through concerted efforts would serve as a foundation for sustained economic growth (Ademola, 2012; Li et al., 2020).

Also, Small, and medium enterprises play a significant role in a country's economy and their success has a direct impact on the development of society. They are considered the driving force behind job creation, economic growth, and innovation (Karanja et al., 2014). Besides, Small, and medium enterprises are also crucial for emerging firms, providing both backward and forward linkages for products and services, and this complements the adjustment process of large firms (Kithae et al., 2012).

As a result, the sector that includes a diverse range of trades with varying degrees of dynamism, technological advancement, and risk-taking attitudes will fill out with essential goods and developed services. Small and medium enterprises currently operate in a more complicated, dynamic environment, particularly in terms of risks and technical advancements (Dalberg, 2011).

For instance, the small and medium enterprises sub-sector in Nigeria have been grossly underdeveloped, which has diminished its contribution to economic growth and development. The four primary problems affecting small and medium enterprises are an unfavorable business climate, inadequate funding, a lack of managerial talent, and limited access to technology (FSS 2020 SME Sector Report, 2007; Chinaemerem and Anthony, 2012).

The establishments of these prior industries had a significant impact on the state's well-being, especially in terms of employment creation. However, they may not have had the necessary training to apply a detailed cost accounting system, which is a source of national outputs, revenues, and feedstock for large firms. Therefore, the researcher intends to fill the existing gap by carrying this research in both large firms and small and medium enterprises with focusing on Cost Accounting techniques in various sectors of the economy in Egypt.

The Concept of Small and Medium Enterprises

Definitions of Small and Medium Enterprises vary in different literature reviews. Most definitions are based on quantitative indicators like the quantity of employees, total assets, and total sales, often broken down by the industrial sector. Previous researchers have shown that, in addition to political considerations, other factors that have a significant effect in governments choosing a certain definition include culture, population density, industrialization, and economic integration. Additionally, they argue that new definitions must be related to the industrial sector (Taiwo et al., 2016).

Although the term "small and medium-sized firms" is used by national governments worldwide as well as in institutions like the World Bank, the European Union, and the World Trade Organization, definitions vary. Small enterprises in Europe can employ up to fifty employees, whereas medium-sized enterprises employ up to 250 people. In the United States, the

requirements are determined by factors like revenue, the number of employees, and other factors like ownership structure.

The Central Bank of Egypt (CBE) defines small business enterprises in Egypt as those with a business volume between EGP 1 million and fifty million, while medium-sized business enterprises are those with a business volume between EGP 50 million and two hundred million.

SMEs, on the other hand, are easy to overlook. Small and medium enterprises outnumber large corporations, even though we rarely hear about them. As a result, it is essential to comprehend their economic impact and business requirements, as well as to ensure that small and medium enterprises are accounted for in statistics and acknowledged in plans and policies. It is essential to recognize small and medium enterprises as potential customers and to tailor products and services specifically for them, from businesses that provide business services, such as banks, accounting firms, law firms, and employment agencies.

More importantly, most national governments are aware of the unique requirements of SMEs. They give small and medium enterprises less stringent regulations to follow and apply lower corporate tax rates to them. Many governments recognize the importance of small and medium enterprises for the economy and employment, and they provide specialized support programs for them. This is like how governments frequently support economic sectors or industries. In addition, small and medium enterprises are significant for more reasons other than their economic impact. Small and medium enterprises are more susceptible to leadership and ownership influence, due to their small size. They are more flexible as a result, and many see them as driving innovation and industry competition.

The CBE announced a program in 2016 to encourage small and medium enterprises receiving medium- and long-term loans. It was mandated that banks devote 20% of their total credit portfolios to financing SMEs' projects. To finance 350,000 companies and create four million new jobs, the goal was for banks to provide two hundred billion Egyptian pounds. In response, banks in Egypt extended more loans to small and medium-sized firms, and by 2019, the value of loans extended to small and medium enterprises increased to EGP 146 billion.

Beyond assisting small and medium enterprises with their finances, the CBE program has other advantages. A better understanding of the role that banking and financing plays for small and medium enterprises can be gained by providing loans to them. Businesses that apply for loans are required to maintain consistent accounting and business management practices. When an SME applies for a loan for the first time, it frequently writes a business plan. Naturally, expanding small and medium enterprises also increases employment and reduces poverty.

Dimension of Cost Accounting Techniques

1. Marginal Cost

Marginal cost can also be defined as variable cost. It is one of the most common cost methods used in decision-making because it helps management pay more attention to the changes caused by the decision under consideration (Syverson, 2019). It is a useful technique, particularly for short-term decisions such as whether to make or buy, accept, or reject a special order, or delete a business line. According to previous research, marginal cost is not a cost method, like job cost or process cost. Instead, it is a method of analyzing cost information for management guidance to identify the impact on profit due to changes in output volume (Hall, 2018).

2. Absorption Cost

According to Gomes et al. (2019), absorption cost is a cost management strategy that accounts for all costs associated with the production of a particular product. Additionally, it is required for external reporting in accordance with accepted accounting principles. Some of the direct costs associated with manufacturing a product includes wages of labors physically manufacturing a product; and the raw materials used in producing a product; in addition to all the overhead costs, such as all utility costs used in producing a product (Lysons and Farrington, 2006). As a result, the cost base according to absorption cost is anything that is a direct cost when producing a product.

Fixed overhead costs are distributed among all products produced during a given time using absorption cost. Variable cost, on the other hand, reports the expense as a single line and lumps together all fixed overhead costs. In addition, while absorption cost determines a fixed overhead cost per-product, variable cost does not (Țurlea et al., 2020).

In contrast, two categories of fixed overhead costs result from absorption cost; those resulting from inventory and the cost of goods sold products. According to Imo and Chukwu (2022), the process of accumulating and allocating the costs associated with a production process to distinct products is referred to as total costs.

This type of cost is required by the accounting standards to create the inventory valuation that is stated in the firm balance sheet. A product may absorb a broad range of fixed and variable costs. In the month that the company pays for these costs, they are not counted as expenses. Instead, until the inventory is sold, they remain as an asset in the inventory; then they are added to the cost of goods sold when sold.

Measures of Financial performance

Financial performance is viewed as a subjective indicator of a company's ability to generate revenue from its primary source of assets (Mills, 2008; Olatunji, 2019). This term can also be used to compare similar firms in the same industry sector or to compare industries or sectors in aggregation, as well as a general measure of a company's overall financial health over a certain period.

According to Cadbury (2002), the concept of performance measurement suggests that employees can increase the firm's value by increasing future cash flows, accelerating their receipt, or making them more certain or less risky. Financial performance can be measured in a variety of ways, but all of them should be taken in aggregation. Some of the financial performance indicators are return on equity, liquidity ratios, asset management ratios, profitability ratios, leverage ratios and market value ratios.

1. Net operating income

Net operating income is the profit generated from all business operations, including interest and taxes. In the context of company profitability, it is regarded as the "bottom line" that receives most of the attention (Henry, 2022). A company that consistently has a high net margin typically is considered to have one or more competitive advantages. The net profit margin compares net income to sales, as follows:

Return on sales = net income after taxes ÷ sales

2. Return on Assets

Return on assets (ROA), as stated by Khalaf in 2013, is a dependent variable. It is calculated by dividing profits after taxes by total assets. In addition, Ekwe in 2014 defined ROA as a ratio that aims to measure the amount of profit generated by the company. It is considered as Profit before tax over Total Assets. In addition, Ekwe and Duru documented in 2012 that ROA was used as a dependent variable because it is regarded as a measure of managerial efficacy.

Problem statement

More than one element will be investigated by this research. Firstly, is the lack of technical skills which are considered an obstacle in developing small businesses due to the inability to access credit (Mbogo, 2011). Moreover, is the lack of competent management which is the consequence of the inability of owners to employ experts with the ability to use the appropriate equipment and methods of production because of the owner's inability to access modern technology. Thus, this leads to cost accounting problems especially in raising the profitability and thus leading to poor financing (Wood, 1979; Onaolapo et al., 2011).

Furthermore, answering the question of which methodological tools can be grouped to increase the effectiveness of cost management tools more than the application of each tool individually within different methods of cost management. Therefore, this study tends to assess the determining factors and the adoption levels of modern accounting techniques by both larger firms and small and medium enterprises in Egypt besides comparing the grouping of cost tools and their impact through the following objectives and questions.

Research objectives

This research seeks to examine the Cost Accounting Techniques and their consequences on Financial Performance of large firms and Small and Medium Enterprises in Egypt. The specific objectives are as follows:

1. Determine the relationship between Marginal Cost and Return on Asset of Small and Medium Enterprises.
2. Determine the relationship between Marginal Cost and Net Profit Margin of Small and Medium Enterprises.
3. Determine the relationship between Absorption Cost and Return on Asset of Small and Medium Enterprises.
4. Determine the relationship between Absorption Cost and Net Profit Margin of Small and Medium Enterprises.

5. Determine the relationship between Marginal Cost and Return on Asset of large firms.
6. Determine the relationship between Marginal Cost and Net Profit Margin large firms.
7. Determine the relationship between Absorption Cost and Return on Asset of large firms.
8. Determine the relationship between Absorption Cost and Net Profit Margin large firms.

Research questions

1. What is the relationship between Marginal Cost and Return on Asset of Small and Medium Enterprises?
2. What is the relationship between Marginal Cost and Net Profit Margin of Small and Medium Enterprises?
3. What is the relationship between Absorption Cost and Return on Asset of Small and Medium Enterprises?
4. What is the relationship between Absorption Cost and Net Profit Margin of Small and Medium Enterprises?
5. What is the relationship between Marginal Cost and Return on Asset of large firms?
6. What is the relationship between Marginal Cost and Net Profit Margin large firms?
7. What is the relationship between Absorption Cost and Return on Asset of large firms?
8. What is the relationship between Absorption Cost and Net Profit Margin large firms?

Methodology:

To determine the impact of Marginal cost and Absorption cost on both return on assets and net profit margin, and to determine whether this impact differs from small and medium enterprises and large firms the researcher will apply the following steps:

▪ Demographic analysis: the demographic analysis includes the characteristics of the sample size in terms of (age, gender, education degree and years of experience).

- Descriptive analysis: the descriptive analysis includes measures of location which are (minimum value, maximum value, and arithmetic mean) and measures of dispersion which are (standard deviation and coefficient of variation).
- Reliability and validity test: The term reliability refers to the consistency of a measure. The statistical approach to estimating reliability varies depending upon the purpose of the measure. Validity is the extent to which a concept, conclusion or measurement is well-founded and corresponds accurately to the real world based on probability. The validity of a measurement tool is the degree of probability to which the tool measures what it claims to measure. In this case, the validity is an equivalent to a percent of how accurately the claim corresponds to reality.
- Test of normality: the researcher will apply the Shapiro-wilk test of normality to determine whether the study variables follow the normal distribution or not to determine the appropriate correlation coefficient that presents the linear relations between the study variables.
- Simple linear regression: the researcher will use the Ordinary Least Squares Simple linear regression to determine the impact of each independent variable on each dependent variable according to the study hypotheses.

Sample Size:

The researcher will select the number of firms to be included in the study sample by using the binomial general random sample size formula as the following:

$$n_o = \frac{Z^2 * p * q}{e^2}$$

Where:

- n_o: Is the sample size for unlimited population.
- **Z**: Is the area under the normal distribution curve for confidence interval **95%** and it has a standardized value of **1.96.**

- **P**: Is the estimated proportion of an attribute that is present in the population. To obtain the maximum sample size *(p),* value must be *0.5.*
- **q**: Is the complement of *(p)* which equal $(1 - p) = 0.5$.
- **e**: Is the margin of error for the confidence interval by which if the confidence interval is 95% then the margin of error *(e)* will be *5%.*

By substituting in the above formula, the sample size (n) will be:

$$n_o = \frac{1.96^2 * 0.5 * 0.5}{0.05^2} = 385$$

The researcher applies the empirical on both small and medium enterprises and large companies, and after collecting the questionnaire results from those who work in small and medium enterprises and in large firms, the researcher obtains four hundred valid questionnaires to be analyzed and thus reaches sufficient results for both SME's and large firms.

The Applied Study:
Introduction:

Under this part the researcher had collected inventory and net income (loss) values for five companies listed under EGX_{100} having a capital greater than 15,000,000 L.E. for two consecutive years (2020 and 2021), also he had collected inventory and net income (loss) values for five companies listed under EGX_{100} having a capital less than 15,000,000 L.E. "Small and Medium Enterprises" (SMEs) for two consecutive years (2020 and 2021), in order to determine the relation between the percent change in inventory and the percent change in net income (loss) for both large companies and SMEs. Marginal and absorption costing refer to the change in inventory ending and beginning balance measured under each of them.

Small and medium enterprises Results analysis:

The following table presents the descriptive analysis for the study sample which consists of five companies for their total assets, inventory, and net income or (loss).

Table (1): Small and medium enterprises descriptive analysis.

Variables	N	Minimum	Maximum	Mean	Std. Deviation	C.V.
Total Assets	10	4221948	14630006	9931312	4804047	0.484
Inventory	10	450236	9917228	2368517	3607190	1.523
Net Income (Loss)	10	200050	2647531	1521674	973242	0.640

Source: Prepared by the researcher depending on SPSS software output.

From table (1) it is concluded that:

- The study sample consists of 5 companies for two consecutive years 2020 and 2021, so the small and medium enterprises study sample has 10 observations.
- Total assets variable has a minimum value of 4221948, a maximum value 1463006 and arithmetic mean of 9931312, the variable dispersion has standard deviation of 4804047 and coefficient of variation 0.484 which means that the variable has a low level of variability.
- Inventory variable has a minimum value of 450236, a maximum value 9917228 and arithmetic mean of 2368517, the variable dispersion has standard deviation of 3607190 and coefficient of variation 1.523 which means that the variable has a high level of variability.
- Net Income or (Loss) variable has a minimum value of 200050, a maximum value 2647531 and arithmetic mean of 1521674, the variable dispersion has standard deviation of 973242 and coefficient of variation 0.640 which means that the variable has a low level of variability.

Then in table (2) the researcher had computed the percentage change for inventory and net income or (loss) between the year 2020 and 2021 for the next five companies with total assets less than 15,000,000 L.E.

Table (2): Small and medium enterprises percentage of change analysis.

No.	Company	Year	Total Assets	Inventory	Change in inventory	Net Income	Change in net income
1	Egyptian International Pharmaceutical Industries	2020	4414949	673088	14.67	2154663	5.97
		2021	5032613	771797		2283216	
2	Egyptian Chemical Industries	2020	4221948	937613	-47.65	208045	-3.84
		2021	9047556	490880		200050	
3	Eastern National Food Security	2020	9408052	450236	0.79	2021410	3.28
		2021	7418168	453779		2087636	
4	Ismailia National Industries	2020	14371552	8426570	15.03	2339887	13.15
		2021	12834301	9917228		2647531	
5	Al Arabiya valves	2020	14630006	630006	48.25	641476	-1.35
		2021	13933974	933974		632827	

Source: Prepared by the researcher depending on SPSS software output.

From table (2) it is concluded that:

▪ The Egyptian International Pharmaceutical Industries Company has a percentage change in inventory of 14.67% in terms that the percentage change in net income is 5.97%.

▪ The Egyptian Chemical Industries Company has a percentage change in inventory of -47.65% in terms that the percentage change in net (loss) is -3.84%.

▪ The Eastern National Food Security Company has a percentage change in inventory of -0.79% in terms that the percentage change in net income) is 3.28%.

▪ The Ismailia National Industries Company has a percentage change in inventory of 15.03% in terms that the percentage change in net income is 13.15%.

▪ The Al Arabiya Valves Company has a percentage change in inventory of 48.52% in terms that the percentage change in net (loss) is -1.35%.

▪ The average percentage change in inventory for small and medium enterprises sample is 20%, and the average

percentage change in net income for small and medium enterprises sample is 3.44%.

For the Small and medium enterprises sample the researcher had applied Spearman correlation coefficient between inventory and net income or (loss) and found that there is a weak, direct, and insignificant relation between inventory and net income or (loss) for SMEs.

Also, the researcher had found that there is no significant impact from inventory on net income or (loss) for SMEs.

Large Enterprises Results analysis:

The following table presents the descriptive analysis for the study sample which consists of five companies for their total assets, inventory, and net income or (loss).

Table (3): Large Enterprises descriptive analysis.

Variables	N	Minimum	Maximum	Mean	Std. Deviation	C.V.
Total Assets	10	115139627	4390901202	1473285284	1473285284	0.838
Inventory	10	10209749	431326653	87983912	126682951	1.440
Net Income (Loss)	10	7294180	239769988	69821778	74991242	1.074

Source: Prepared by the researcher depending on SPSS software output.

From table (3) it is concluded that:
- The study sample consists of 5 companies for two consecutive years 2020 and 2021, so the Large Enterprises study sample has 10 observations.
- Total assets variable has a minimum value of 115139627, a maximum value 4390901202 and arithmetic mean of 1473285284, the variable dispersion has standard deviation of 1473285284 and coefficient of variation 0.838 which means that the variable has a low level of variability.

- Inventory variable has a minimum value of 10209749, a maximum value 431326653 and arithmetic mean of 87983912, the variable dispersion has standard deviation of 126682951 and coefficient of variation 1.440 which means that the variable has a high level of variability.
- Net Income or (Loss) variable has a minimum value of 7294180, a maximum value 239769988 and arithmetic mean of 69821778, the variable dispersion has standard deviation of 74991242 and coefficient of variation 1.074 which means that the variable has a high level of variability.

Then in table (4) the researcher had computed the percentage change for inventory and net income or (loss) between the year 2020 and 2021 for the next five companies with total assets greater than 15,000,000 L.E.

Table (4): Large Enterprises percentage of change analysis.

No.	Company	Year	Total Assets	Inventory	Change in inventory	Net Income	Change in net income
1	Arab Ceramica - Remas	2020	689735906	67950000	26.77	30529902	41.57
		2021	766633405	86140000		43221040	
2	Pyramisa Hotels and Tourist Villages	2020	1467138493	27588799	64.64	21060227	188.83
		2021	1710767175	45421306		60827343	
3	Arab Engineering Industries	2020	115139627	10209749	18.45	7294180	74.71
		2021	155739479	12093290		12743394	
4	Ezz for ceramic and porcelain	2020	1621701704	135810000	217.60	31033095	672.63
		2021	4390901202	431326653		239769988	
5	Acrow Misr for formwork and metal scaffolding	2020	1754399557	20551187	108.01	93729850	68.58
		2021	2060696294	42748135		158008756	

Source: Prepared by the researcher depending on SPSS software output.

From table (4) it is concluded that:

- The Arab Ceramica - Remas Company has a percentage change in inventory of 26.77% in terms that the percentage change in net income is 41.57%.
- The Pyramisa Hotels and Tourist Villages Company has a percentage change in inventory of 64.64% in terms that the percentage change in net income is 188.83%.
- The Arab Engineering Industries Company has a percentage change in inventory of 18.45% in terms that the percentage change in net income is 74.71%.
- The Ezz for ceramic and porcelain Company has a percentage change in inventory of 217.60% in terms that the percentage change in net income is 672.63%.
- The Acrow Misr for formwork and metal scaffolding Company has a percentage change in inventory of 108.01% in terms that the percentage change in net income is 68.58%.
- The average percentage change in inventory for Large Enterprises sample is 87.09%, and the average percentage change in net income for Large Enterprises sample is 209.26%.

For the Large Enterprises sample the researcher had applied Spearman correlation coefficient between inventory and net income or (loss) and found that there is a moderate, direct, and significant relation with coefficient value of 0.751 and P-value of 0.012 between inventory and net income or (loss) for Large Enterprises.

Then, the researcher developed an OLS Simple Regression to determine the impact of Large Enterprises inventory on net income or (loss), and the result shown in table (5).

Table (5): Large Enterprises Simple Regression

Model	OLS Simple Regression	Dependent Variable	Net Income or (loss)
Independent variables	Coefficient	P-value	Significance
Constant	3.06822	0.1741	Insignificant
Inventory	0.444849	0.0122	Significant
F-test	10.37939	P-value	0.012208
R-squared		71.0321%	

Source: Prepared by the researcher depending on SPSS software output.

From table (5) it is concluded that there is a significant and direct impact from inventory on Net income or (loss) of large enterprises with a coefficient of determination value of 71.032%, which means that 71.0321% change in net income or (loss) is due to the variability of inventory.

Questionnaire Statements Abbreviations:

The Researcher uses the following abbreviations for the questionnaire statements and main study variables as shown in table (6):

Table (6): Main Study Variables and Statements Abbreviations.

Statement / Variable	Abbreviation
Marginal Cost	**X_1**
In your firm, Marginal cost is the technique of presenting cost data	**X_1.1**
In your firm, marginal cost is shown separately for managerial decision- making	**X_1.2**
Absorption Cost	**X_2**
In your firm, Absorption cost is used when preparing financial statements for external purpose	**X_2.1**
In your firm, Absorption cost is suitable for determining the price of the product as it ensures that all costs are covered	**X_2.2**
Does your firm apply the linking of all production costs to the cost unit to prepare a full cost per unit.	**X_2.3**
Return on Assets	**Y_1**
The Return on Assets shows the percentage of how profitable a company's assets are in generating Revenue.	**Y_1.1**
Return on assets is displayed as a percentage	**Y_1.2**
Return on assets is a profitability ratio that measures the net income produced by total assets	**Y_1.3**
Net Profit Margin	**Y_2**
Net profit margin is equal to have much net income or profit is generated as a percentage of revenue	**Y_2.1**
Net profit Margin shows what percentage of your sales is actual profit.	**Y_2.2**

Source: Prepared by the researcher.

Research Hypotheses:

The Research Hypotheses are divided into two groups as the following:

First group: Hypotheses Related to SMEs:

- ▪ H_{A1}: There is a significant impact of Marginal cost on Return on Asset.
- ▪ H_{A2}: There is a significant impact of Marginal cost on Net profit margin.
- ▪ H_{A3}: There is a significant impact of Absorption cost on Return on Asset.
- ▪ H_{A4}: There is a significant impact of Absorption costs on Net profit margin.

2nd. group: Hypotheses Related to large firms:

- ▪ H_{A5}: There is a significant impact of Marginal cost on Return on Asset.
- ▪ H_{A6}: There is a significant impact of Marginal cost on Net profit margin.
- ▪ H_{A7}: There is a significant impact of Absorption cost on Return on Asset.
- ▪ H_{A8}: There is a significant impact of Absorption costs on Net profit margin.

Small and medium enterprises Analysis:

I. Demographic Analysis:

The sample consists of four hundred valid respondents and their (age, gender, education degree and years of experience) characters shown in the following next tables.

Table (7): Age.

Gender	Frequency	Percent
From 20 - 30	62	17.25
From 30 - 40	111	27.75
From 40 - 50	160	40
over fifty	69	18
Total	400	100.0

Source: prepared by researcher.

From table (7) it is concluded that there are sixty-two people with the age range of 20 years to 30 years old. The age of111 persons their age ranged from 30 years old to 40 years old. 160 persons range from 40 years old to 50 years old, and finally there are sixty-nine persons whose ages are over fifty.

Table (8): Gender.

Gender	Frequency	Percent
Male	270	67.5
Female	130	32.5
Total	400	100.0

Source: prepared by researcher.

From table (8) it is concluded that the sample members 270 person are males representing 67.5% of the total sample, and 130 persons are females representing 32.5% of the total sample.

Table 93): Educational Degree.

	Frequency	Percent
PhD	27	6.75
Master's degree	25	6.25
Bachelor's degree	348	87
Total	400	100.0

Source: prepared by researcher**.**

From table (9) it is concluded that twenty-seven members of the sample have PhD representing 6.75%, 25 persons have master's degree representing 6.25% and 348 persons represent the majority of sample of 87% have a bachelor's degree.

Table (10): Experience in years.

	Frequency	Percent
More than 30 years	6	1.5
From 26 to 30	16	4
From 20 to 25	16	4
From 15 to 19	35	8.75
From 10 to 14	65	16.25
From 5 to 9	88	22
Less than 5 years	120	30
Total	400	100.0

Source: prepared by researcher.

From table (10) it is concluded that the sample members, 6 of them have a more than 30-year experience, 16 persons have from 26 to 30 years of experience, 16 persons have from 20 to 25 years of experience, 35 persons have from 15 to 19 years of experience, 65 persons have from 10 to 14 years of experience, 88 persons have from 5 to 9 years of experience and finally the majority of sample are 120 persons with less than 5 years of experience.

II.   Descriptive Analysis:

Table (11): Descriptive Analysis.

Variable	N	Minimum	Maximum	Mean	Std. Deviation	C.V
X_1	400	2.0	4.5	3.5	0.7	0.2
X_2	400	2.3	4.7	3.7	0.6	0.2
Y_1	400	1.7	5.0	3.7	0.6	0.2
Y_2	400	3.0	4.5	3.6	0.5	0.1

Source: prepared by researcher.

From table (11) it is concluded that:

- The independent variable Marginal Cost (X_1) has a minimum value of 2.0 and maximum value of 4.5 with an arithmetic mean 3.5, while it has a standard deviation of 0.7 and coefficient of variation (C.V.) 0.2 which means a low level of dispersion among the responds.
- The independent variable Absorption Cost (X_2) has a minimum value of 2.3 and maximum value of 4.7 with an arithmetic mean 3.7, while it has a standard deviation of 0.6 and coefficient of variation (C.V.) 0.2 which means a low level of dispersion among the responds.
- The dependent variable Return on Assets (Y_1) has a minimum value of 1.7 and maximum value of 5.0 with an arithmetic mean 3.7, while it has a standard deviation of 0.6 and coefficient of variation (C.V.) 0.2 which means a low level of dispersion among the responds.
- The dependent variable Net Profit Margin (Y_2) has a minimum value of 3.0 and maximum value of 4.5 with an arithmetic mean 3.6, while it has a standard deviation of 0.5 and coefficient of variation (C.V.) 0.2 which means a low level of dispersion among the responds.

III.   Statements Frequency Analysis:

The following table shows the frequency distribution of the main variable's statements According to Likert fifth scale distribution which are: (totally agree, agree, normal, disagree and totally disagree).

Table (12): the frequency distribution analysis.

Statement	Totally Disagree	Percent	Disagree	Percent	Neutral	Percent	Agree	Percent	Totally Agree	Percent
Marginal Cost										
X_1.1	0	0.0	49	11.8	184	44.1	176	42.2	59	14.1
X_1.2	0	0.0	70	16.8	82	19.7	218	52.3	98	23.5
Absorption Cost										
X_2.1	0	0.0	16	3.8	65	15.6	270	64.7	117	28.1
X_2.2	0	0.0	19	4.6	86	20.6	203	48.7	160	38.4
X_2.3	16	3.8	110	26.4	85	20.4	256	61.4	0	0.0
Return on Assets										
Y_1.1	0	0.0	20	4.8	75	18.0	276	66.2	97	23.3
Y_1.2	12	2.9	44	10.6	140	33.6	158	37.9	114	27.3
Y_1.3	12	2.9	20	4.8	105	25.2	256	61.4	75	18.0
Net Profit Margin										
Y_2.1	0	0.0	0	0.0	221	53.0	152	36.5	95	22.8
Y_2.2	0	0.0	0	0.0	161	38.6	229	54.9	78	18.7

Source: prepared by researcher.

IV.   Test of Reliability and Validity:

Cronbach's Alpha test is used to measure the degree of study variables stability and the following table presents that the stability factor for the sample responsiveness is 69.8% which means that the responses were very high and stable to the questionnaire.

Table (13): Cronbach's Alpha Reliability test for Statements and parameters.

Variable	Cronbach's Alpha
X_1.1	0.722
X_1.2	0.722
X_1	0.707
X_2.1	0.699
X_2.2	0.667
X_2.3	0.679
X_2	0.657
Y_1.1	0.654
Y_1.2	0.674
Y_1.3	0.681
Y_1	0.640
Y_2.1	0.677
Y_2.2	0.691
Y_2	0.670

Source: prepared by researcher.

From table (13) Cronbach Alpha test for the main variables of study and the statements of each variable all have a reliability value greater than 60% which means the questionnaire responses results can be dependable in correlations and multiple regression analysis.

Table (14): Validity t-test for Statements and parameters

Variable	t-test	Degrees of Freedom	P-value
X_1.1	96.549	399	0.000
X_1.2	81.406	399	0.000
X_1	105.606	399	0.000
X_2.1	117.785	399	0.000
X_2.2	100.392	399	0.000
X_2.3	68.265	399	0.000
X_2	124.940	399	0.000
X_3.1	115.992	399	0.000
X_3.2	74.184	399	0.000
X_3.3	93.978	399	0.000
X_3	131.981	399	0.000
X_4.1	108.076	399	0.000
X_4.2	127.265	399	0.000
X_4	158.134	399	0.000

Source: prepared by researcher.

Validation t-test is used to measure the extent of statements consistent with the votes in the questionnaire, and from the following table it is found that t-test values are all positive and significant as its all p-value is equal to 0.0000 and this presents a high level of consistency.

V. Test of Normality:

For determining whether the study variables follow the normal distribution or not, Shapiro-Wilk test of normality will be used which is based on a Chi-square test for normality.

Table (15): Normality test.

Variable	Chi-square test	P-value	Decision
Marginal Cost	0.925	0.000	Reject Normality
Absorption Cost	0.933	0.000	Reject Normality
Return on Assets	0.856	0.000	Reject Normality
Net Profit Margin	0.844	0.000	Reject Normality

Source: prepared by researcher.

From the previous table it is concluded that marginal cost, absorption cost, return on assets and net profit margin are not normally distributed as the P-value for the four variables for Shapiro-wilk test is less than 0.05.

VI. The Correlation Matrix:

From table (16), it is concluded that marginal cost, absorption cost, return on assets and net profit margin are not normally distributed, therefore. Spearman correlation coefficient will be used to test the relation between the variables of study based on the ranks of the observations in each variable. The coefficient of correlation ranged from zero to one with a t-test of significance as the p-value less than 0.05 means a significant relation exists.

Table (16): correlation Matrix.

Variable	X_1	X_2	Y_1	Y_2
X_1	1			
P-value	-			
X_2	-.224**	1		
P-value	0	-		
Y_1	0.288**	0.447**	1	
P-value	0.002	0	-	
Y_2	0.29**	0.121*	0.433**	1
P-value	0.005	0.013	0	-

Source: Prepared by the researcher.

From the table (16) it is concluded that:

- There is a significant, direct, and weak relation between marginal cost (X_1) and return on assets (Y_1) with correlation coefficient 0.288 and *p-value* 0.002 which is less than 0.05.
- There is a significant, direct, and weak relation between absorption cost (X_2) and return on assets (Y_1) with correlation coefficient 0.447 and *p-value* 0.000 which is less than 0.05.
- There is a significant, direct, and weak relation between marginal cost (X_1) and net margin profit (Y_2) with correlation coefficient 0.90 and *p-value* 0.005which is less than 0.05.
- There is a significant, direct, and weak relation between absorption cost (X_2) and net margin profit (Y_2) with correlation coefficient 0.121 and *p-value* 0.013which is less than 0.05.

VII. The Simple Linear Regression Models:

Testing the first hypothesis:

H_{A1}: There is a significant impact of Marginal cost on Return on Asset.

The following table summarizes the linear OLS model:

Table (17): the impact of Marginal cost on Return on Asset.

Model	OLS	Dependent variable		Return on Assets
Independent variables	Coefficient	t-ratio	p-value	Significance
Constant	4.06345	28.03	<0.0001	Significant
Marginal Cost	0.116932	−2.844	0.0047	Significant
Adjusted R-squared			71.67%	

Source: Prepared by the researcher.

From the previous table it is concluded that:

- The overall model adjusted coefficient of multiple determination is 71.67% which means that the change in the dependent variable return on assets is 71.67% due to the change in the independent variable marginal cost and constant.
- Both constant and marginal costs have a significant impact on return on assets as their coefficients p-value is less than 0.05.
- Marginal cost has a direct impact on return on assets with a value of 0.116932 without constant.
- The overall equation of forecasting the Return on assets is:

$$\widehat{Return\ on\ Assets}_{it} = 4.06345 + 0.116932\ Marginal\ cost_{it}$$

Testing the second hypothesis:

H_{A2}: There is a significant impact of Marginal cost on Net profit Margin.

The following table summarizes the linear OLS model:

Table (18): the impact of Marginal cost on Net profit margin.

Model	OLS	Dependent variable		Net profit Margin
Independent variables	Coefficient	t-ratio	p-value	Significance
Constant	2.21520	14.15	<0.0001	Significant
Marginal Cost	0.392136	9.340	<0.0001	Significant
Adjusted R-squared			77.17%	

Source: Prepared by the researcher.

From the previous table it is concluded that:

- The overall model adjusted coefficient of multiple determination is 77.17% which means that the change in the dependent variable net profit margin is 77.17% due to the change in the independent variable marginal cost and constant.
- Both constant and marginal costs have a significant impact on the net profit margin as their coefficients p-value are less than 0.05.
- Marginal cost has a direct impact on the net profit margin with a value of 0.392136 without constant.
- The overall equation of forecasting the net profit margin is:

$$\widehat{Net\ Profit\ Margin}_{it}$$
$$= 2.21520 + 0.392136\ Marginal\ cost_{it}$$

Testing the third hypothesis:

H_{A3}: There is a significant impact from Absorption cost on Return on Asset.

The following table summarizes the linear OLS model:

Table (19): the impact of Absorption cost on Return on Asset.

Model	OLS	Dependent variable		Return on Assets
Independent variables	Coefficient	t-ratio	p-value	Significance
Constant	3.61255	29.83	<0.0001	Significant
Absorption Cost	0.420403	12.24	<0.0001	Significant
Adjusted R-squared			79.23%	

Source: Prepared by the researcher.

From the previous table it is concluded that:
- The overall model adjusted coefficient of multiple determination is 79.23% which means that the change in the dependent variable return on assets is 79.23% due to the change in the independent variable absorption cost and constant.
- Both constant and absorption costs have a significant impact on return on assets as their coefficients p-value are less than 0.05.

- Absorption cost has a direct impact on return on assets with a value of 0.420403 without constant.
- The overall equation of forecasting the Return on assets is:

$$\widehat{Return\ on\ Assets}_{it} = 3.61225 + 0.420403\ Absorption\ cost_{it}$$

Testing the fourth hypothesis:

H_{A4}: There is a significant impact from Absorption cost on Net Profit Margin.

The following table summarizes the linear OLS model:

Table (20): the impact of Absorption cost on Net profit margin.

Model	OLS	Dependent variable		Net profit Margin
Independent variables	Coefficient	t-ratio	p-value	Significance
Constant	3.38906	23.86	<0.0001	Significant
Absorption Cost	0.646659	16.98	<0.0001	Significant
Adjusted R-squared			60.45%	

Source: Prepared by the researcher.

From the previous table it is concluded that:

- The overall model adjusted coefficient of multiple determination is 60.45% which means that the change in the dependent variable net profit margin is 60.45% due to the change in the independent variable absorption cost and constant.
- Both constant and absorption costs have a significant impact on the net profit margin as their coefficients p-value are less than 0.05.
- Absorption cost has a direct impact on net profit margin with a value of 0.646659 without constant.
- The overall equation of forecasting the net profit margin is:

$$\widehat{Net\ Profit\ Margin}_{it} = 3.38906 + 0.646659\ Absorption\ cost_{it}$$

Large Firms Analysis:
I.   Demographic Analysis:

The sample consists of four hundred valid respondents and their (age, gender, education degree and years of experience) characters are shown in the following tables.

Table (21): Age.

Gender	Frequency	Percent
From 20 - 30	97	24.25
From 30 - 40	115	28.75
From 40 - 50	135	33.75
over fifty	53	13.25
Total	400	100.0

Source: prepared by researcher.

From table (21) it is concluded that the age of ninety-seven persons range from 20 to 115 30 years old. 115 people ranged from 30 years old to 40 years old. Fifty-three persons range from 40 to 50 years old, and finally there are sixty-nine persons whose ages are over fifty.

Table (22): Gender.

Gender	Frequency	Percent
Male	310	77.5
Female	90	22.5
Total	400	100.0

Source: prepared by researcher.

From table (22) it is concluded that the sample members 310 person are males representing 77.5% of the total sample, and ninety persons are females representing 22.5% of the total sample.

Table (23): Educational Degree.

	Frequency	Percent
PhD	45	11.25
Master's Degree	45	11.25
Bachelor's Degree	310	77.5
Total	400	100.0

Source: prepared by researcher**.**

From table (23) it is concluded that forty-five of the sample members are PhD holders representing 11.25%. Forty-five persons have master's degrees representing 11.25%and 310 persons representing the majority of sample of 77.5% have bachelor's degrees.

Table (24): Experience in years.

	Frequency	Percent
More than 30 years	**12**	**3**
From 26 to 30	**7**	**1.75**
From 20 to 25	**14**	**3.5**
From 15 to 19	**59**	**14.75**
From 10 to 14	**68**	**17**
From 5 to 9	**77**	**19.25**
Less than 5 years	**43**	**10.75**
Total	**400**	**100.0**

Source: prepared by researcher.

From table (24) it is concluded that of the sample members,12 have experience more than 30 years, 7 persons have from 26 to 30 years of experience, 14 persons have from 20 to 25 years of experience, 59 persons have from 15 to 19 years of experience, 68 persons have from 10 to 14 years of experience, 77 persons have from 5 to 9 years of experience and finally there are 43 persons of the sample with less than 5 years of experience.

II.   Descriptive Analysis:

Table (25): Descriptive Analysis.

Variable	N	Minimum	Maximum	Mean	Std. Deviation	C.V
X_1	**400**	**2.0**	**4.5**	**3.6**	**0.6**	**0.2**
X_2	**400**	**2.3**	**5.0**	**3.8**	**0.5**	**0.1**
Y_1	**400**	**1.7**	**5.0**	**3.7**	**0.5**	**0.1**
Y_2	**400**	**3.0**	**5.0**	**3.8**	**0.5**	**0.1**

Source: prepared by researcher.

From table (25) it is concluded that:

- The independent variable Marginal Cost (X_1) has a minimum value of 2.0 and maximum value of 4.5 with an arithmetic mean 3.6, while it has a standard deviation of 0.6 and coefficient of variation (C.V.) 0.2 which means a low level of dispersion among the responds.
- The independent variable Absorption Cost (X_2) has a minimum value of 2.3 and maximum value of 5.0 with an arithmetic mean 3.8, while it has a standard deviation of 0.5 and coefficient of variation (C.V.) 0.1 which means a low level of dispersion among the responds.

- The dependent variable Return on Assets (Y_1) has a minimum value of 1.7 and maximum value of 5.0 with an arithmetic mean 3.7, while it has a standard deviation of 0.5 and coefficient of variation (C.V.) 0.1 which means a low level of dispersion among the responds.
- The dependent variable Net Profit Margin (Y_2) has a minimum value of 3.0 and maximum value of 5.0 with an arithmetic mean 3.8, while it has a standard deviation of 0.5 and coefficient of variation (C.V.) 0.1 which means a low level of dispersion among the responds.

III.   Statements Frequency Analysis:

The following table demonstrates the frequency distribution of the main variable's statements according to Likert fifth scale distribution which are: (totally agree, agree, normal, disagree and totally disagree).

Table (26): the frequency distribution analysis.

Statement	Totally Disagree	Percent	Disagree	Percent	Neutral	Percent	Agree	Percent	Totally Agree	Percent
Marginal Cost										
X_1.1	0.0	0.0	37.0	9.3	145.0	36.3	203.0	50.8	15.0	3.8
X_1.2	0.0	0.0	48.0	12.0	82.0	20.5	242.0	60.5	28.0	7.0
Absorption Cost										
X_2.1	0.0	0.0	13.0	3.3	68.0	17.0	266.0	66.5	53.0	13.3
X_2.2	0.0	0.0	14.0	3.5	69.0	17.3	231.0	57.8	86.0	21.5
X_2.3	9.0	2.3	45.0	11.3	70.0	17.5	245.0	61.3	31.0	7.8
Return on Assets										
Y_1.1	5.0	1.3	52.0	13.0	79.0	19.8	215.0	53.8	49.0	12.3
Y_1.2	6.0	1.5	37.0	9.3	120.0	30.0	197.0	49.3	40.0	10.0
Y_1.3	0.0	0.0	2.0	0.5	127.0	31.8	215.0	53.8	56.0	14.0
Net Profit Margin										
Y_2.1	0.0	0.0	0.0	0.0	131.0	32.8	217.0	54.3	52.0	13.0
Y_2.2	0.0	0.0	0.0	0.0	131.0	32.8	217.0	54.3	52.0	13.0

Source: prepared by researcher.

IV. Test of Reliability and Validity:

Cronbach's Alpha test to measure the degree of study variables stability and the following table presents that the stability factor for the sample responsiveness of 70.1% which means that the responses were very high and stable to the questionnaire.

Table (27): Cronbach's Alpha Reliability test for Statements and parameters.

Variable	Cronbach's Alpha
X_1.1	0.721
X_1.2	0.692
X_1	0.713
X_2.1	0.701
X_2.2	0.711
X_2.3	0.723
X_2	0.716
Y_1.1	0.644
Y_1.2	0.684
Y_1.3	0.680
Y_1	0.663
Y_2.1	0.712
Y_2.2	0.708
Y_2	0.710

Source: prepared by researcher.

From table (27), Cronbach Alpha test for the main variables of study and the statements of each variable all have a reliability value greater than 60% which means the questionnaire responses results can be dependable in correlations and multiple regression analysis.

Table (28): Validity t-test for Statements and parameters

Variable	t-test	Degrees of Freedom	P-value
X_1.1	97.627	399	0.000
X_1.2	92.380	399	0.000
X_1	121.789	399	0.000
X_2.1	119.845	399	0.000
X_2.2	109.333	399	0.000
X_2.3	83.105	399	0.000
X_2	146.664	399	0.000
X_3.1	80.325	399	0.000
X_3.2	84.035	399	0.000
X_3.3	109.974	399	0.000
X_3	148.834	399	0.000
X_4.1	114.503	399	0.000
X_4.2	117.412	399	0.000
X_4	139.392	399	0.000

Source: prepared by researcher.

Validation t-test used to measure the extent of statements consistent with the votes in the questionnaire, and from the following table it found that t-test values are all positive and significant as its all p-value is equal to 0.0000 and this presents a high level of consistency.

V. Test of Normality:

For determining whether the study variables follow the normal distribution or not Shapiro-Wilk test of normality will be used which is based on a Chi-square test for normality.

Table (29): Normality Test.

Variable	Chi-square test	P-value	Decision
Marginal Cost	0.900	0.000	Reject Normality
Absorption Cost	0.906	0.000	Reject Normality
Return on Assets	0.927	0.000	Reject Normality
Net Profit Margin	0.889	0.000	Reject Normality

Source: prepared by researcher.

From the previous table, it is concluded that marginal cost, absorption cost, return on assets and net profit margin are not normally distributed as the P-value for the four variables for Shapiro-Wilk test is less than 0.05.

VI.   The correlation Matrix:

From table (24) it is concluded that marginal cost , absorption cost , return on assets and net profit margin are not normally distributed, so Spearman correlation coefficient will be used to test the relation between the variables of study based on the ranks of the observations in each variable, the coefficient of correlation ranged from zero to one with a t-test of significance as the p-value less than 0.05 means a significant relation exists.

Table (30): correlation Matrix.

Variable	X_1	X_2	Y_1	Y_2
X_1	1.000			
P-value	-			
X_2	-0.076	1.000		
P-value	0.129	-		
Y_1	0.162**	0.385**	1.000	
P-value	0.000	0.000	-	
Y_2	0.231**	0.227**	0.293**	1.000
P-value	0.000	0.000	0.000	-

Source: Prepared by the researcher.

From table (30) it is concluded that:

- There is a significant, direct, and weak relation between marginal cost (X_1) and return on assets (Y_1) with correlation coefficient 0.162 and *p-value* 0.002 which is less than 0.05.
- There is a significant, direct, and weak relation between absorption cost (X_2) and return on assets (Y_1) with correlation coefficient 0.385 and *p-value* 0.000 which is less than 0.05.
- There is a significant, direct, and weak relation between marginal cost (X_1) and net margin profit (Y_2) with correlation coefficient 0.231 and *p-value* 0.005which is less than 0.05.
- There is a significant, direct, and weak relation between absorption cost (X_2) and net margin profit (Y_2) with correlation coefficient 0.227 and *p-value* 0.013which is less than 0.05.

VII.   The Simple Linear Regression Models:

Testing the fifth hypothesis:

H_{A5}: There is a significant impact of Marginal Cost on Return on Asset.

The following table summarizes the linear OLS model:

Table (31): The impact of Marginal Cost on Return on Asset.

Model	OLS		Dependent variable	Return on Assets
Independent variables	Coefficient	t-ratio	p-value	Significance
Constant	3.88837	25.56	<0.0001	Significant
Marginal Cost	0.6616169	14.60	<0.0001	Significant
Adjusted R-squared			49.23%	

Source: Prepared by the researcher.

From the previous table it is concluded that:

- The overall model adjusted coefficient of multiple determination is 49.23% which means that the change in the dependent variable return on assets is 49.23% due to the change in the independent variable marginal cost and constant.
- Both constant and marginal costs have a significant impact on return on assets as their coefficients p-value is less than 0.05.
- Marginal cost has a direct impact on return on assets with a value of 0.6616169 without constant.
- The overall equation of forecasting the Return on assets is:

$$\widehat{Return\ on\ Assets}_{it}$$
$$= 3.88837 + 0.6616169\ Marginal\ cost_{it}$$

Testing the sixth hypothesis:

H_{A6}: There is a significant impact of Marginal Cost on Net profit Margin.

The following table summarizes the linear OLS model:

Table (32): The impact of Marginal Cost on Net profit Margin.

Model	OLS		Dependent variable	Net profit Margin
Independent variables	Coefficient	t-ratio	p-value	Significance
Constant	3.22866	19.42	<0.0001	Significant
Marginal Cost	0.161655	3.505	0.0005	Significant
Adjusted R-squared			53.82%	

Source: Prepared by the researcher.

From the previous table it is concluded that:

- The overall model adjusted coefficient of multiple determination is 53.82% which means that the change in the dependent variable net profit margin is 53.82% due to the change in the independent variable marginal cost and constant.
- Both constant and marginal costs have a significant impact on the net profit margin as their coefficients p-value are less than 0.05.
- Marginal cost has a direct impact on the net profit margin with a value of 0.161655 without constant.
- The overall equation of forecasting the net profit margin is:

$$\widehat{Net\ Profit\ Margin}_{it} = 3.22866 + 0.161655\ Marginal\ cost_{it}$$

Testing the seventh hypothesis:

H_{A7}: There is a significant impact of Absorption Cost on Return on Asset.

The following table summarizes the linear OLS model:

Table (33): the impact of Absorption cost on Return on Asset.

Model	OLS	Dependent variable		Return on Assets
Independent variables	**Coefficient**	**t-ratio**	**p-value**	**Significance**
Constant	2.21902	13.24	<0.0001	Significant
Absorption Cost	0.378958	8.735	<0.0001	Significant
Adjusted R-squared			45.22%	

Source: Prepared by the researcher.

From the previous table it is concluded that:

- The overall model adjusted coefficient of multiple determination is 45.22% which means that the change in the dependent variable return on assets is 45.22% due to the change in the independent variable absorption cost and constant.
- Both constant and absorption costs have a significant impact on return on assets as their coefficients p-value are less than 0.05.

- Absorption cost has a direct impact on return on assets with a value of 0.378958 without constant.
- The overall equation of forecasting the Return on assets is:

$$Return\ \widehat{on\ Assets}_{it} = 2.21902 + 0.378958\ Absorption\ cost_{it}$$

Testing the eighth hypothesis:

H_{A8}: There is a significant impact of Absorption Cost on Net profit Margin.

The following table summarizes the linear OLS model:

Table (34): The impact of Absorption Cost on Net profit margin.

Model	OLS	Dependent variable		Net profit Margin
Independent variables	**Coefficient**	**t-ratio**	**p-value**	**Significance**
Constant	2.83894	14.45	<0.0001	Significant
Absorption Cost	0.252127	4.955	<0.0001	Significant
Adjusted R-squared			53.03%	

Source: Prepared by the researcher.

From the previous table it is concluded that:

- The overall model adjusted coefficient of multiple determination is 53.03% which means that the change in the dependent variable net profit margin is 53.03% due to the change in the independent variable absorption cost and constant.
- Both constant and absorption costs have a significant impact on the net profit margin as their coefficients p-value are less than 0.05.
- Absorption cost has a direct impact on net profit margin with a value of 0.252127 without constant.
- The overall equation of forecasting the net profit margin is:

$$Net\ Prof\widehat{it\ Margin}_{it} = 2.83894 + 0.252127 Absorption\ cost_{it}$$

Conclusion

This research examined the Cost Accounting Techniques and its effect on Financial Performance of large firms and small and medium enterprises in Egypt by determining the impact of Marginal Cost and Absorption Cost on both return on assets and net profit margin and to determine whether this impact differs from small and medium enterprises and large firms. The researcher applied the empirical study on both small and medium enterprises and large companies, and after collecting the questionnaire results from both those who works in small and medium enterprises and in large firms, the researcher obtains four hundred valid questionnaires to be analyzed and to reach sufficient results for both SME's and large firms. The results are if there is a direct impact of Marginal Cost and Absorption cost on both return on assets and net profit margin of both small and medium enterprises and large firms.

Therefore, from table (2) Small and medium enterprises emphasize the use of variable costs more than total costs in their decision-making processes. This preference is often driven by the unique characteristics and constraints of small and medium enterprises compared to larger firms. Here's why small and medium enterprises might lean towards focusing on variable costs.

1. Resource Limitations: From table (1) it is found that small and medium enterprises usually have limited financial resources, making it essential to manage their costs efficiently. By closely monitoring and managing variable costs, small and medium enterprises can make more immediate adjustments to their expenses based on changes in production levels or market demand.

2. Flexibility: From table (2) it is found that small and medium enterprises tend to be more agile and flexible than large corporations. Variable costs are directly tied to production

volume, allowing small and medium enterprises to quickly scale up or down based on market conditions without significant long-term commitments. This flexibility is crucial for survival and growth in dynamic markets.

3. Short-Term Decision Making: From table (1) it is found that small and medium enterprises often make short-term decisions due to limited resources and the need to adapt quickly. Variable costs are more relevant in short-term decision-making scenarios, such as adjusting production levels, pricing, and inventory management.

4. Cost Control: From table (2) it is found that small and medium enterprises can exert more control over variable costs by negotiating prices with suppliers, optimizing production processes, and managing labor costs. This level of control allows them to react swiftly to changes in the business environment.

5. Break-Even Analysis: From table (2) it is found that for small and medium enterprises, understanding the point at which their revenues cover their variable costs (break-even point) is crucial. This helps them determine the minimum level of sales required to avoid losses.

6. Risk Management: From table (1) by focusing on variable costs, small and medium enterprises can mitigate risks associated with uncertain market conditions. They can reduce their exposure by adjusting production and costs according to the demand they are currently experiencing.

However, from table (4) Large firms tend to emphasize the use of total costs more than variable costs in their decision-making processes. This preference is often rooted in the complexity and long-term considerations that come with larger-scale operations. Here's why large firms might lean towards focusing on total costs:

I. Complex Cost Structures: From table (31) it is found that large firms typically have more intricate cost structures due to their diverse product lines, multiple departments, and extensive operations. Total costs provide a comprehensive view of all expenses incurred across various aspects of the business.

II. Long-Term Planning: From table (34) it is found that large firms often engage in strategic planning that spans several years or even decades. Total costs are crucial for long-term budgeting, forecasting, and setting financial goals, helping large firms make sustainable decisions.

III. Capital Expenditure Decisions: From table (3) it is found that large Investments in fixed assets, such as facilities, machinery, and technology, are significant decisions for large firms. These decisions are often based on total costs, including both initial investment and ongoing maintenance expenses.

IV. Economies of Scale: From table (3) it is found that large firms can take advantage of economies of scale, which means that as they produce more, their average cost per unit tends to decrease. Understanding total costs helps large firms optimize production levels to achieve these cost advantages.

V. Operational Efficiency: Managing fixed costs, which are inherent to the business regardless of production volume, is crucial for large firms to maintain operational stability and efficiency. Total cost analysis helps identify opportunities for cost reduction and process improvement.

VI. Strategic Pricing: Setting prices for a wide range of products and services requires consideration of both variable and fixed costs. Total cost analysis helps large firms determine pricing strategies that cover all expenses and ensure profitability.

VII. Risk Mitigation: Large firms often face higher risks due to their extensive operations and market exposure. Total cost analysis aids in identifying potential financial vulnerabilities and developing risk mitigation strategies.

VIII. Investor Relations: When communicating with shareholders and investors, large firms need to present a comprehensive financial picture. Total cost analysis provides a holistic understanding of the company's financial health.

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