

Effects of Modern Strategic Management Accounting Techniques on Performance of Commercial Banks in Palestine: An Empirical Study

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ABSTRACT

This research was conducted to investigate the adoption of Commercial Banks in Palestine with strategic management accounting techniques (SMAT) and to evaluate the influences of SMAT on business performance. The SMAT sub-dimensions were identified as customer-oriented, competitor-oriented, and cost-oriented techniques. Hypotheses were used to investigate the effects of SMAT and sub-dimension usages on the perceived performance of businesses. The data collected from 46 of the participants at Commercial Banks in Palestine were used in the testing of the hypotheses. The findings of the study indicated that the participating businesses had adoption intensity of above average for sixteen out of 17 SMAT and they had over 50% adoption with 12 of these techniques. Though SMAT and cost, customer and competitor-oriented sub-dimensions had meaningfully influenced on performance, the positive relationships and effects were found to be adequate to agree to take the hypotheses.

1. Introduction

The business environment has undergone successive changes over the past two decades due to the terrific dependence on modern communication and information systems, and also the openness and wideness in the worldwide market. These alterations have resulted in growing pressures on enterprises to be more competitive and changing their considerations to do maximization of efficiency in resource exploitation to do market control or retain their competitive ranks. Hence, the application of practices of traditional management is no longer of importance if any organization wants to grow and last. Furthermore, there is a need for contemporary companies to have reliable and accurate information for purposes of coming up with suitable decisions concerning the environmental factors around them (Alamri, 2018).

Putting into consideration the fast developments and changes occurring and subsequent processes of globalization, the terms strategy, efficiency, sustainability, vision, productivity, and mission have become famous in the commercial and management literature. For sustainable competitive advantage, business persistence and development are of great importance. Businesses apply various managerial techniques and tools to withstand such an advantage (Aksoylu, Aykan, 2013). They normally go for manufacturing techniques that are of high-quality but low-cost through the application of management methods like management of total quality, strategic management, process management, information management and focus on long-term optimistic desires (satisfaction of business, creativity, increase in performance, etc.). Inside the perspective of strategic management, with that kind of development, strategic management accounting techniques (SMAT) were developed due to the chase for efficacy and business productivity. Hence, the first aim of this research was to inspect the SMAT usage intensity of Commercial Banks in Palestine and to decide their implementation with these techniques. Consequently, the second aim was to examine the influences of the usage of SMAT on the observed performance of participating businesses. At the start, the concepts techniques and perceived performance, strategic management accounting are stated and the associations between them are clarified; thereafter, the hypothesis examination outcomes are presented and explained.

2. Literature Review and Theoretical Framework

2.1. Strategic Management Accounting

Simmonds (1981) was the first author who introduced the concept of strategic management accounting in the management accounting literature. He stated that strategic management accounting is "the provision and analysis of management accounting data about a business and its competitors used for developing and monitoring business strategy". Similarly, Bromwich (1990) defined this term as "the provision and analysis of financial information on the firm's product markets and competitors' costs and costs structures and the monitoring of the enterprise's strategies and those of its competitors in these markets over several periods". The two previous descriptions of strategic management accounting designate clearly for the prospective task of strategic management accounting in supporting competitive advantages by offering financial information to decision-makers which is necessary for the identification of the competitive rank of the organization. Many definitions which came after Simmonds (1981) and Bromwich (1990) attempt to position strategic management accounting with strategic management and marketing function. For instance, Roslender and Hart (2003) gave a definition of strategic management accounting "as a generic approach to accounting for strategic positioning, defined by an attempt to integrate insights from management accounting and marketing management within a strategic management framework". More so, some writers (e.g. Agasisti et al. 2008; Ma and Tayles, 2009, Roslender and Hart, 2010, Langfield-Smith, 2008; Tillmann and Goddard, 2008;) looked at strategic management accounting as a fresh stream that orients systems of management accounting with the organizations' strategic direction. Based on this perspective, strategic management accounting (SMA) is oriented toward the strategic management facets, which include formulation, controlling, and implementation. For instance, current research revealed that strategic management accounting is a significant precursor in the strategic planning context (Cuganesan et al., 2012). Though, there is no consent among investigators and writers concerning the meaning of SMA. Apparently, they nearly come to an agreement that the definition of SMA should not boundary its task to the offering of certain kind of data as a substitute of having multidimensional data (e.g. competitors, products, customers, general environment, market, e.t.c) (Carlsson-Wall et al., 2015; McManus, 2013). Actually, this multidimensional data can be of great value as far as linking the strategic management literature (SML) and management accounting into a combined strategic management framework (SMF) is concerned. Some authors and researchers attempt to show this bridging way into their description of SMA. For instance, Hoque (2001) well-defined SMA as "a process of identifying, gathering, choosing and analyzing accounting data for helping the management team to make strategic decisions and to assess organizational effectiveness". Moreover, according to the Chartered Institute of Management Accountants' official terminology, SMA is "a form of management accounting in which emphasis is placed on information which relates to factors external to the entity, as well as non-financial information and internally generated information" (Jack, 2009). Hence, SMA is a modern method of accounting structured around the organizations' strategic orientation as a try to monitor and develop the strategy of an organization and for purposes of controlling activities. In line with Soltani et al. (2014), investigators in the competitive advantages area designate that businesses require SMA so as to do an improvement in their performance because they encounter varying competitive conditions by giving the managers and supervisors with required data.

The key question, however, in this circumstance is how to implement the SMA with strategic management in business? Cadez and Guilding (2008) have operationalized and intellectualized SMA as two main dimensions for the purposes of answering these questions. They include; implementation and use of SMA techniques and management accountants that are involved in the process of strategic management. Thereafter, several experiential works have made application of these two scopes as measures for performing SMA in association (Ah Lay and Jusoh, 2011; Aksoylu and Aykan, 2013; Dunk, 2011; Oboh and Aljibolade, 2017; Tillmann and Goddard, 2008).

Considering the first measurement of SMA that is the implementation of the techniques of strategic management accounting, these techniques were subdivided into five subcategories as follows:

- a. Costing: 6 techniques were encompassed in this practice to do the determination, analysis, and management of cost strategically. They included: activity-based costing, target costing, life cycle costing, value chain costing, attribute costing, and quality costing. They signify an element that is crucial in an exterior and forward-thinking orientation, and the continuation of strategies (Cuganesan *et al.*, 2012; Ewert and Ernst, 1999; Roslender and Hart, 2010).
- b. Planning, control, and performance measurement: the key techniques related to this category are integrated performance measurements (balanced scorecard) and benchmarking and performance measurements based on integration. The company is looking for best practices of competitors as a means for enlightening its enactment and strategic positioning through the implementation of benchmarking with its exterior and forward-thinking orientation. (Cadez and Guilding, 2008; Cinquini and Tenucci, 2010). Though, companies can apply both nonfinancial and financial measures of performance in the implementation of the integrated performance measurements. For instance, a balanced scorecard presumes an interior and outside orientation in conjunction with forward-thinking orientation (Kaplan and Norton, 2001). Consequently,

these practices can be of great value to directors in developing, controlling, and implementing approaches and identification and management of the knowledgeable capital (Tayles et al., 2007).

- c. *Strategic decision-making*: In this practice, three methods and techniques that are effective concerning the strategic orientation of an organization are encompassed. They include strategic costing, brand valuation, and strategic pricing. External and forward-thinking orientations are conferred by all these techniques (competitors, products, market, etc) and enable the creation and achievement of competitive advantages (Roslender and Hart, 2010).
- d. *Competitor accounting*: this approach comprises: assessment of competitor cost, competitive position monitoring, and competitor appraisal performance (Shah et al., 2011). These techniques are meant useful by their external orientations in the planned decision-making procedure such as strategy monitoring and strategy formulation (Cinquini and Tenucci, 2010).
- e. *Customer accounting*: the approach centers on clients and it encompasses customer profitability, valuation of customers as assets, and lifetime customer profitability analysis. Just like the other practices, exterior and forward-thinking orientation are conferred by these three techniques. Overall, these techniques enable assessment of profitability associations with clients, supporting of the utilization resources linked to customers, and enhancing the construction of strategies connected with the marketing 4Ps (product, place, promotion, and pricing). Consequently, these practices can improve the implementation or fit between strategic management, marketing, and management accounting (Andon and Baxter, 2011).

In line with the practices stated above, it is evident that the exterior orientation of the practice and its capability of giving forthcoming information is the key gauge for putting into consideration the management accounting technique as a strategic one. In line with Carlsson-Wall et al. (2015) and McManus (2013), the data that is given by these practices is important in the observing of strategy and formulation and for the sustainable construction of value.

similarly, strategic management accounting looks through the whole operations enabling business managers and accountants to move to an outward-oriented viewpoint rather than an inward-oriented viewpoint (Kırlı & Gümüő, 2011). Hence, strategic management accounting exhibits the application of management accounting structures to give support data to business bosses and supervisors in control activities and strategic decisions. (Cinquini & Tenucci, 2010).

Overall, strategic management accounting (SMA) has two perspectives: (1) SMA encompasses a collection of strategic accounting practices; and (2) SMA articulates the contribution of accountants in the strategic decision-making and control instruments of a corporate (Cadez & Guilding, 2008). Bearing in mind the later perspective, there is a creation of strategic work units, and the units are believed to be key to business and for proper operation of the control mechanism and decision-making tool business reports are presented to these units (Otley, 2001). Various functions of strategic management accounting include gathering competitor information, reducing costs based on strategic decisions, and collecting data from the accounting service in strategic choices (Shah, A. Malik, & M. S. Malik, 2011). It is implemented in four phases while performing such functions (Langfield-Smith, 2008): (1) Description of strategic operational units; (2) Cost strategic analysis; (3) Strategic analysis of market; (4) Strategic assessment.

While conducting the phases of strategic management accounting as mentioned above, there is a need for the application of long-term outward-looking techniques. Below is a presentation of such techniques.

2.2. Strategic Management Accounting Techniques (SMAT)

Five categories evaluate SMAT in the literature (Cadez & Guilding, 2008): they include strategic costing; strategic decision making, strategic planning, control and management of performance; customer accounting, and competitor accounting. Table 1 represents SMAT in line with the stated categories.

Below is a brief definition of the techniques presented in Table 1:

Table 1: SMAT

SMAT Categories	SMAT
Strategic costing	1. Attribute costing
	2. Life-cycle costing
	3. Quality costing
	4. Target costing
	5. Value chain costing

Strategic planning, control, and performance management	1. Benchmarking
	2. Integrated performance measurement
Strategic decision-making	1. Strategic cost management
	2. Strategic pricing
	3. Brand valuation
Competitor accounting	1. Competitor cost assessment
	2. Competitor position monitoring
	3. Competitor performance appraisal
	4. Balanced scorecard
Customer accounting	1. Customer profitability analysis
	2. Lifetime customer profitability analysis
	3. Valuation of customers as assets

- a. Attribute costing. The cost of benefits provided by goods obliged to customers is covered in this practice. These costs comprise grantee agreements, supply guarantee, after-sale service cost, and reinforcement. In summary, the technique centers on product qualities such as like product characteristics, after-sale services, and certain sale agreements (Şener & Dirlik, 2012);
- b. Life-cycle costing. This is the calculation of the whole cost of a product in its lifetime. It may include the design, growth, extinction processes of a product, marketing, decrease, advertisement, and maturation (Cinquini & Tenucci, 2006);
- c. Quality costing. The product quality is a key measurement of market competition in relation to that product. Hence, improving and maintaining quality is always advantageous to the producer in terms of competition. Reaching or failing to reach a certain desired quality will always be accompanied by its cost. (Karcioğlu, 2000). Quality costs comprise of the cost to offer the expected quality and the cost to be borne by inferiority;
- d. Target costing. Cost planning in the design procedure of the product is reinforced by this technique and is forwarded as a process of strategic profit and cost management. It uses several concepts to minimize the cost in the process of designing, development, and research phases and provides demands of the consumers like reliability, quality, and speed. It also makes attempts of minimizing the life-cycle product cost. Target cost, comprising of the base of the target costing technique, is designed in line with the sale price to touch the aim market share and articulates market-based cost. Different from outdated "cost-plus", the target cost is a conjunction of profit and sale price as an alternative of costs (Aksoylu & Dursun, 2001);
- e. Value chain costing. The value in this equals the money of the technical, social, and economic benefits and services given to clients in exchange for the cash paid by the clients. Hence, value has got expression in money and shows the net benefit of a client in relation to paid price. The value chain is made up of all activities making values in all phases right from the common raw material sources to the end goods that are distributed to clients. Apart from interior activities, the business also needs to expand external activities while making a value (Turk, 2004). This will enable them to create ties with other businesses through external activities and therefore be capable of reducing costs and maximizing profitability.
- f. Benchmarking. Benchmarking is defined as the adoption of excellent practices of other enterprises either in a similar or dissimilar field and put attempts to enhance actions by comparative assessments. Through benchmarking, an organization gets an opportunity to learn from the experiences of other enterprises that were gained through trials and errors. long-term targets are covered in strategic plans and strategy enables reaching of such targets. For a business to be successful, getting to know the strategies of other successful businesses is crucial.
- g. Integrated performance measurement. This technique looks at systems of integrated performance measurement displaying the importance of both non-financial and financial measurements. In performance measurements, effective units of measurement are used. (Cinquini & Tenucci, 2010);
- h. Strategic cost management. This involves the application of strategy and marketing-oriented cost data to spearhead and create strategies that are capable of providing a competitive advantage that is constant (Cadez & Guilding, 2008);
- i. Strategic pricing. During the pricing process, there is a necessity of several kinds of information like competitors' reactions to fluctuations of price, the flexibility of price, experienced and economic indicators (Cinquini & Tenucci, 2006). The kind of data is used in the assessment of the challengers and their market styles.
- j. Brand valuation. In this practice, various factors are combined gained over strategic factors of the brand thought such as brand gains, the position of a brand in the marketplace, and level of publicizing support of the product. It exhibits the

financial estimation of features such as leadership, protection through a brand, support, permanence, and internationalization (Şener & Dirlik, 2012);

- k. Competitor cost assessment. Different from other practices, this technique major on the cost structures of competitors. Information on this issue are gathered by several sources of information like observations, former employees of competitors, and common suppliers (Cinquini & Tenucci, 2006);
- l. Competitor position monitoring. This practice analyzes the position of competitors through monitoring and assessment of competitor sales, trading volumes, trends in sales revenue, market shares, and unit costs. Based on the competitors' information, a business monitors its own position, looks at its strategy, and does changes if necessary (Şener & Dirlik, 2012);
- m. Competitor performance appraisal. In this technique, there is the involvement of analysis of financial performed by obtaining the data that was acquired from the statements of finance of the competitors. That kind of analysis showcases crucial information concerning the competitor's performance.
- n. Balanced scorecard. Kaplan and Norton were the first individuals who came up with the balanced scorecard concept in 1992 and incorporates financial and non-financial measurements into financial administration. This practice aims at creating a balance by developing connections within several multi-dimensional business approaches like customer perspectives, financial position, information, growth, and internal operational processes (Shah et al., 2011).
- o. Customer profitability analysis. In this technique, the profit gained from a particular customer is calculated. The calculation of profit is conducted based on the cost of a particular client and monitorable sale revenues. It's also known as "customer account profitability" (Cadez & Guilding, 2008);
- p. Lifetime customer profitability analysis. In this technique, there is an analysis of customer profitability based on future trends. It emphasizes the estimation of future income streams and costs of particular clients (Şener & Dirlik, 2012). It gives an explanation concerning the sustainability of upcoming estimates of accountings linked to customers.
- q. Valuation of customers as assets. In this practice. The calculation of worth-added by clients is centered. For example, this technique can calculate the current value of upcoming income streams to be delivered by a particular client (Cadez & Guilding, 2008).

2.3. Performance of banks

Various performance measurement methods are applied by banks. Even though quantitative-qualitative and separate objective-subjective approaches are usually used, some studies employ both of them at the same time (Singh, 1986; Dess & Robinson, 1984; Alpkın, Ergün, Bulut, & Yılmaz, 2005). "perceived performance" is the performance dignified by a questionnaire study used by banks bosses to gauge qualitative and quantitative performance and to ask how they recognize the banks' success in comparison to others in the industry with respect to several performance indicators (Alpkın et al., 2005). Regardless of some reliability and validity issues (Çelik & Karadal, 2007), the hardness in attaining objective data to do the monitoring and assessment of the performance of a business needs the application of the viewed information from the participants of such surveys.

When able to reach and evaluate information, the performance of banks is evaluated with financial indicators and also with several other aspects. Such aspects may involve the reputation and image of a business, brand recognition, competition, reliability, creativity, efficiency in competition, social responsibility, and innovativeness. The consideration of business performance on these aspects involves stakeholders, the public, employees, and customers. Hence, it is suggested that both financial criteria and intangible criteria are used to assess business performance. In situations where intangible assets of a corporate influence its performance, there is the possibility of using intangible criteria to assess its performance. Explanatory information about performance may be provided through performance outcomes attained by managers through comparison of the financial and intangible belongings of a corporate with other enterprises.

In organizational outcomes, performance is usually the most considered issue. Limited studies have been done on the association existing within the relationships between performance and SMAT adoption. Chenhall and Langfield-Smith (1998) conducted research using the biggest businesses in Australia and saw important relationships among strategic management accounting tools and business performances. Cadez and Guilding (2008) found a weak association between the application of strategic management accounting tools and 7-dimensional performance Şener and Dirlik (2012) examined the relationships amongst SMAT usage and the alleged performance of the top 1,000 industries in Turkey and revealed an average level association between them. Ever since the studies were conducted in more than 37 out of 1000 big businesses, the sample magnitude was not a picture of the whole population. This study hence aimed at eliminating such shortages in alleged performance valuation.

3. Research Methodology

3.1. Research Objectives, Model, and Hypotheses

This research focused on two objects. The first aim majored on the assessment of the SMAT adoption intensity of Commercial Banks in Palestine. and to evaluate their adoption of these practices. In the second objective, determination of the effects of usage of SMAT on the performance of participating banks was centered. Figure 1 below is a presentation of the theoretical model formed to investigate such effects.

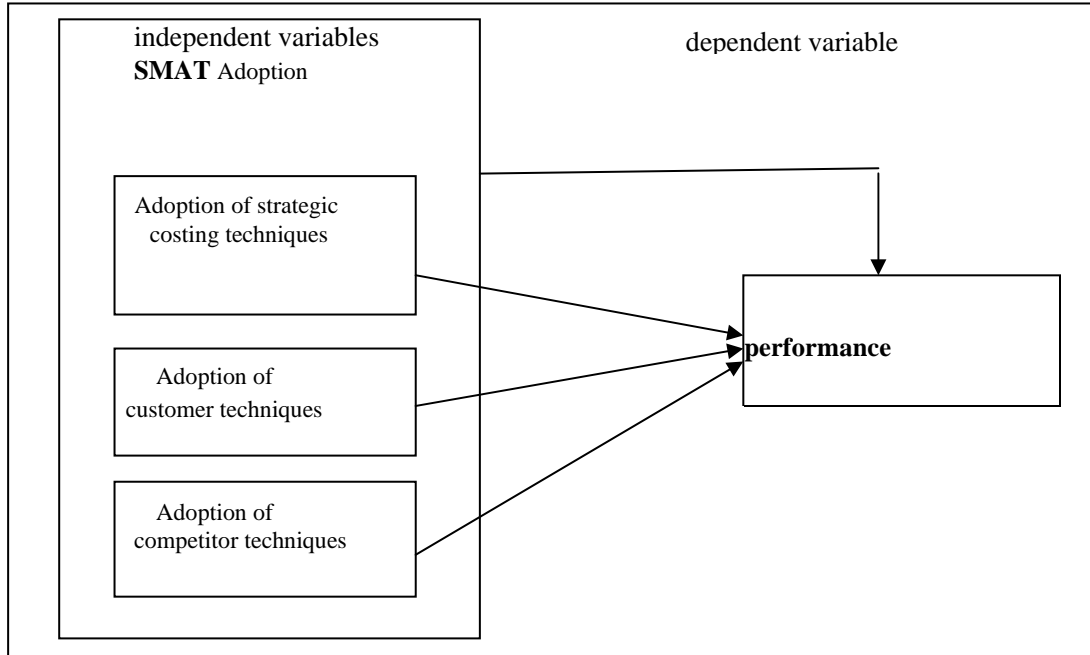


Figure 1. Research model.

SMAT practice and sub-dimensions were regarded as independent variables and the performance was regarded as a dependent variable. The Main hypothesis and Sub-hypotheses were formed as follows:

H1: There are relationships and a positive effect of SMAT adoption on performance at commercial banks in Palestine.

H₁₋₁: There are relationships and a positive effect of the adoption of strategic costing practices on performance at commercial banks in Palestine.

H₁₋₂: There are relationships and a positive effect of the adoption of customer techniques on performance at commercial banks in Palestine.

H₁₋₃: There are relationships and a positive effect of the adoption of competitor practices on performance at commercial banks in Palestine.

3.2. Population and Sample

The study was conducted out in commercial banks in Palestine. The banks have a population (15) commercial banks, of which (6) were Palestinian banks: (Bank of Palestine, Palestinian Commercial Bank, Investment Bank, Al-Quds Bank, National Bank, and Al-Safa Bank), and (8) Jordanian Arab foreign banks: (Cairo Amman Bank, Arab Bank, Jordan Commercial Bank, Jordan National Bank, Housing Bank, Jordan Kuwait Bank, Union Bank), and one Egyptian bank: (the Egyptian Land Bank). (P. M. A., 2020).

The data were collected via a questionnaire survey given to (general manager, financial manager, management accountant, and Senior Accountant). An aggregate of 65 responses was obtained from the participants, 9 of them were removed from the sample size due to various reasons. Hence, there were assessments of (46) surveys. The rate of response to surveys was 70.7 %.

3.3. Data Collection and Analysis Methods

The forms of the questionnaire comprised three sections. The first section was made up of 7 questions concerning the business and the manager; the second section comprised of 11 questions to evaluate the perceived performance level of the business; the third section had 17 questions to examine the rate of usage of SMAT. This study employed two scales and they are described below:

SMAT. This independent variable SMAT was created through the use of scales that was established by Shah et al. (2011), Cadez and Guilding (2008), and Cinguini and Tennucci (2006). SMAT usage intensity was investigated by the scale, made up of 17 terms. SMAT usage terms employed the Likert scale Quintette, signifying (1) never, (2) rarely, (3) sometimes, (4) most of the time, and (5) always. The Cronbach Alfa value showing the reliability of the scale was established as 0.92.

The performance. performance was measured by a subjective scale created by Alpkhan et al. (2005) which was capable of measuring quantitative and qualitative performance at the same time. The scale is made up of 11 terms. The perceived performance terms are indicated as (1) significantly lower than a competitor, (2) slightly lower than a competitor, (3) same as competitors, (4) slightly higher than competitors, and (5) significantly higher than competitors. The scales' Cronbach Alfa value was established as 0.91.

4. Results

4.1. Demographic Characteristics

Table 2 provides the results of descriptive statistics of the participants as following:

A-Positions: 47.83% were Senior Accountant, 26.08%, were management accountant, 23.92%, were financial manager, and 2.17%, general manager, that means the participants were concerned persons in the financial and administrative system, they were also concerned with the subject of the study, which enhances confidence in the information gathered by the questionnaire.

B-Academic qualification: 100% of participants had a university and higher educational level. which means all participants had good academic qualifications that they able to understand the questions of the questionnaire, which enhances confidence in the information gathered by the questionnaire.

C-Scientific specialization: 78.72% of participants responding to the questionnaire questions were an accounting specialty, and they were the most capable in dealing with various accounting systems, and 13.04% of participants were business administration specialization, which means they had the ability to deal with administrative decisions at the banks, This is an indication of the extent of the ability of the individuals responding to the questionnaire to understand the questionnaire questions and the subject of the study.

D-Professional experience years: more than 91.49% of participants had more than 11 years of experience, which means that they had sufficient experience in the financial, administrative, and banking fields and they had the ability to deal with different accounting systems, and they had the experience and ability to deal with the questionnaire objectively.

Table 2: Demographic Characteristics of Participants

	Characteristics	Frequency	Percentage
positions	general manager	1	2.17
	financial manager	11	23.92
	management accountant	12	26.08
	Senior Accountant	22	47.83
	Total	46	100
Education	B.C	23	50.00
	High Diploma	4	8.70
	M. A	16	34.78
	Ph.D.	3	6.52
	Total	46	100
Specialization	Accounting	36	78.72
	Business Administration	6	13.04
	Banking and Financial Sciences	3	6.52
	Others	1	2.17
	Total	46	100
Professional experience (years)	5-10	4	8.51
	11-15	15	31.91
	16-20	17	36.17
	21 +	10	21.73
	Total	46	100

The demographic features were not used as dependent or independent variables and also were not applied in hypotheses, different analyses, or relationships. The only significance of their use was to give information concerning the sample and offer more support in the interpretation of hypotheses.

4.2. Research Variables

Table 3 is a representation of the Standard deviations and the mean for independent and dependent variables of this research.

Table 3: Averages and Standard Deviations of Variables

Variables	Mean	Standard deviation
Strategic costing techniques	3.54	0.68
Customer techniques	3.29	0.92
Competitor techniques	3.45	0.86
SMAT	3.46	0.67
The performance	3.70	0.68

Adoption of SMAT and performance scored above the mean (3.70 and 3.46, in that order). Among the sub-dimensions of SMAT with the same mean, strategic costing techniques implementation had a higher mean of 3.54, and customer and competitor-oriented techniques scored a low mean of 3.45 and 3.29 respectively.

4.3. Adoption Level of SMAT techniques at banks

Table 4 represents the adoption levels at banks with SMAT, and usage intensities and frequencies. With respect to a 5-point scale, usage intensities ranged between 3.68 (quality and target costing) and 2.69 (balanced scorecard). 16 out of seventeen techniques had adoption intensity above average.

Mainly, the rates of SMAT usage were considered in the determination of the adoption levels of participating banks with SMAT. A 5-point scale: (1) (never) indicating non- Adoption; (2) (rarely) and (3) (sometimes) indicating a low level of adoption; (4) (most of the time) and (5) (always) indicating a high level of adoption, was applied in the determination of the adoption levels of banks with SMAT.

The findings indicated that the participating banks had over 50% adoption with twelve of 17 techniques. A non-adoption level of over (36.1 %) was experienced in only the balanced scorecard.

In line with Table 4, it is evident that banks frequently submitted at a high-level with strategic costing techniques: quality costing (61.4%), strategic pricing (61.4%) target costing (61.9%), and brand valuation (60.9%). The banks that were incapable of observing these techniques were majorly comprised of competitor techniques: competitor position monitoring (5.9%), competitor performance appraisal (9.4%), and competitor cost assessment (8.4%). The balanced scorecard (36.1%) technique exhibited the highest non-adoption ratio. The participants are weak in the balanced scorecard technique because it is frequently applied in performance assessment applications in the corporate world. These results differ from those that were conducted by Cinquini and Tenucci (2006) on international businesses in Italy. He discovered that Italian companies have got a little level of Usage with these practices. Such differences could be attributed to differences in culture and selected samples.

Table 4: SMAT adoption Levels at Banks

Technique	Frequency			Mean	Standard deviation
	Non- adoption Banks	Banks with low-level adoption	Banks with high-level adoption		
1. Quality costing	1 (3%)	17 (35.7%)	28 (61.4%)	3.68	0.91
2. Target costing	2 (3.5%)	16 (34.7%)	28 (61.9%)	3.68	0.93
3. Strategic pricing	2 (4%)	16 (34.6%)	28 (61.4%)	3.66	0.93
4. Brand valuation	3 (5.4%)	15 (33.7%)	28 (60.9%)	3.64	0.98
5. Benchmarking	2 (4.5%)	19 (41%)	25 (54.5%)	3.57	0.98
6. Int. performance measurement	4 (8.4%)	19 (41%)	23 (50.6%)	3.37	1.01
7. Customer profitability analysis	3 (4.5%)	19 (42.5%)	24 (53%)	3.56	1.01
8. Value chain costing	4 (5%)	18 (38.1%)	26 (57%)	3.54	0.98

9. Strategic costing	4 (5.4%)	18 (38.2%)	26 (56.4%)	3.52	0.94
10. Lifetime customer profitability analysis	3 (6.4%)	19 (40.6%)	24 (53%)	3.49	1.03
11. Attribute costing	2 (5%)	21 (44.6%)	23 (50.5%)	3.48	0.90
12. Competitor position monitoring	3 (5.9%)	19 (42.1%)	24 (52%)	3.48	1.07
13. Valuation of customers as assets	4 (9.4%)	19 (41%)	23 (49.6%)	3.41	1.09
14. Competitor cost assessment	4 (8.4%)	20 (44.5%)	22 (47.1%)	3.39	1.07
15. Competitor performance appraisal	4 (9.4%)	18 (38.1%)	24 (52.5%)	3.37	1.11
16. Life-cycle costing	4 (8.4%)	22 (49.5%)	19 (42%)	3.27	0.96
17. Balanced scorecard	17 (36.1%)	12 (27.2%)	17 (36.6%)	2.69	1.46

The Factors Specifying SMAT adoption

For purposes of determining the sub-dimensions of the strategic management accounting practices, there was the performance of factor analysis. Varimax rotation was used to evaluate basic factors, and 3 factors with a quality value of over 1 were capable of explaining 61.08% of the total variance. Table 5 is a representation of the results of factor analysis.

There was an evaluation of three factors in factor analysis. The first aspect was determined as "strategic costing-oriented techniques", factor 2 as "customer-oriented techniques", and factor 3 as "competitor/competition-oriented techniques". In line with factor loadings, the initial factor group "strategic costing-oriented techniques", took the first position with a variance explanation ratio of 43.95% and an Eigenvalue of 7.472. This reason could be attributed to accepting future-oriented practices intended at giving companies a competitive advantage. The second group factor variance explanation ratio based on customer-oriented techniques was at 9.93% and this group was typically made of the sustainability of customer-oriented accountings and the customer valuation as assets. The third-factor group total variance explanation ratio "competitor/competition-oriented techniques" was established at 7.20%. On a competition information base, this factor is largely dependent. Competitor position monitoring, benchmarking techniques, competitor cost assessment, and competitor performance appraisal were titled in this manner because they were employed in the frame of competitor/competition information use.

Correlation Table

Table 6 is a representation of the relationship between performance and SMAT adoption and sub-dimensions.

Table 5: Results of Factor Analysis

SMAT	Factor loading	Eigenvalue	Explained variance	Cronbach Alfa
Factor 1: Strategic costing		7.472	43.95	0.88
Quality costing	0.814			
Target costing	0.767			
Life cycle costing	0.729			
Attribute costing	0.700			
Value chain costing	0.647			
Strategic pricing	0.555			
Strategic costing	0.552			
Brand valuation	0.510			
Integrated performance measurement	0.502			
Factor 2: Customer		1.688	9.93	0.79
Lifetime customer profitability analysis	0.869			
Valuation of customers as assets	0.847			
Customer profitability analysis	0.696			
Balanced scorecard	0.512			

Factor 3: Competitor	1.22	7.20	0.82
Competitor position monitoring	0.816		
Competitor cost assessment	0.769		
Competitor performance appraisal	0.746		
Benchmarking	0.550		
	Total explained variance	61.08	

Table 6: Correlation Matrix

	1	2	3	4	5
1. Strategic costing techniques adoption	1				
2. Customer techniques adoption	0.580*	1			
3. Competitor techniques adoption	0.682*	0.581*	1		
4. SMAT adoption	0.914*	0.808*	0.827*	1	
5. performance	0.139*	0.195*	0.147*	0.182*	1

Note. * $p < 0.01$.

An optimistic but weak association was seen among usage of SMAT and sub-dimensions and perceived performance. Regardless of the fragile relationship, growing SMAT and sub-dimensions generated progressing perceived support. Şener and Dirlik (2012) did research on the top 500 and the second largest 500 industrial companies in Turkey and discovered an average relationship association between SMAT usage and perceived performance. Likewise, Cadez and Guilding (2008) discovered a weak relationship between the usage of strategic management accounting tools and 7-dimensional performance including the perceived performance of the top 500 Slovenian trades. Chenhall and Langfield-Smith (1998) did research on 140 industrial productions chosen from the largest companies in Australia and discovered a great association between strategic management accounting tools and business performances. Also, another research conducted by, Said, Hui, Othman, and Taylor (2010) surveyed 109 Malaysian industries and the findings revealed an average level association amongst the strategic management accounting tools usage and financial performance.

Hypotheses Testing

There is one Main hypothesis and 3 Sub-hypotheses generated within the range of this research.

The main hypothesis is:

H1: There is a relationship and a positive effect of SMAT adoption on performance at commercial banks in Palestine.

To test this hypothesis, a regression analysis was performed. Table 7 and 8 represents the findings of regression analysis conducted to test H1. It was evident from the findings that SMAT adoption was capable of explaining 63% of the performance. There was a positive value for the beta factor and supported the positive meaningful relationship among variables. Hence, the H1 hypothesis becomes accepted.

Table 7: Results of Regression Analysis Performed to Determine the Effect of SMAT adoption on the Performance

	<i>R</i>	<i>R</i> ²	Corrected <i>R</i> ²	Standard error of estimation	<i>F</i>
performance	0.822	0.630	0.428	0.64	6.835

Notes. $p < 0.01$. Dependent variable: performance; Independent variable: SMAT usage.

Table 8: Coefficients of Regression Analysis Performed to Determine the Effect of SMAT adoption on the Performance

	Non-standardized coefficients		Standardized	<i>t</i>	Sig.
	Beta	Standard error	Beta		
Constant	3.091	0.238		13.013	0.00
SMAT adoption	0.176	0.067	0.182	2.614	0.01

This research first sub-hypothesis looks at the effect of techniques of cost-oriented on performance and the association between strategic costing-oriented practices adoption and performance.

The first sub-hypothesis is:

H₁₋₁: There is relationship and a positive effect of the adoption of strategic costing techniques on performance at commercial banks in Palestine

Table 9: Results of Regression Analysis Performed to Determine the Effect of Strategic Costing Techniques Adoption on Performance

	<i>R</i>	<i>R</i> ²	Corrected <i>R</i> ²	Standard error of estimation	<i>F</i>
performance	0.139	0.089	0.115	0.64	3.965

Notes. *p* < 0.05. Dependent variable: performance; Independent variable: strategic costing-oriented techniques adoption.

Table 10: Coefficients of Regression Analysis Performed to Determine the Effect of Strategic Costing Techniques adoption on Performance

	Non-standardized coefficients		Standardized	<i>t</i>	Sig.	Beta
		Standard error	Beta			
Constant	3.231	0.241		13.432	0.00	
Strategic costing techniques implementation	0.133	0.067	0.139	1.991	0.02	

The Beta factor and regression analysis to test the hypothesis are displayed in Tables 9 and 10. The influence of the technique of strategic costing-oriented on performance was established as 11.5%. The linearity of the relationship is indicated by the positive Beta value. Thus, Hypothesis H₁₋₁ was accepted.

The second sub-hypothesis of this research is:

H₁₋₂: There is relationship and a positive effect of the adoption of customer techniques on performance at commercial banks in Palestine.

In line with the effect of techniques of customer-oriented, adoption on performance, the correlation coefficient was established at 0.195, the determination coefficient established at 0.138, and the corrected determination coefficient established at 0.133 (see Table 11). A considerably poor but positive relationship amongst customer-oriented techniques adoption and performance backup hypothesis H₁₋₂ (see Table 12).

Table 11: Results of Regression Analysis Performed to Determine the Effect of Customer Techniques adoption on Performance

	<i>R</i>	<i>R</i> ²	Corrected <i>R</i> ²	Standard error of estimation	<i>F</i>
performance	0.195	0.138	0.133	0.64	7.934

Notes. *p* < 0.00. Dependent variable: the performance; Independent variable: customer-oriented techniques usage.

Table 12: Coefficients of Regression Analysis Performed to Determine the Effect of Customer Techniques adoption on Performance

	Non-standardized coefficients		Standardized	<i>t</i>	Sig.	Beta
		Standard error	Beta			
Constant	3.243	0.169		19.238	0.00	
Customer techniques adoption	0.139	0.049	0.195	2.817	0.00	

The third sub- hypothesis of the present research aimed at the effect of competitor-oriented techniques adoption on performance. The sub -hypothesis stated:

H_{1.3}: There is relationship and a positive effect of adoption of competitor techniques on performance at commercial banks in Palestine.

Table 13: Results of Regression Analysis Performed to Determine the Effect of Competitor Techniques adoption on Performance

	<i>R</i>	<i>R</i> ²	Corrected <i>R</i> ²	Standard error of estimation	<i>F</i>
The performance	0.147	0.122	0.117	0.65	4.402

Notes. *p* < 0.05. Dependent variable: performance; Independent variable: competitor-oriented techniques usage.

Table 14: Coefficients of Regression Analysis Performed to Determine the Effect of Competitor-Oriented Techniques adoption on Performance

	Non-standardized coefficients		Standardized	<i>t</i>	Sig.	Beta
		Standard error	Beta			
Constant	3.317	0.189	0.147	17.581	0.00	
Competitor techniques adoption	0.111	.053		2.098	0.03	

It was evident from Tables 13 and 14 that 11.7% of performance could be explained by competitor techniques adoption. Regardless of an important but considerably fragile relationship, the positive effect needs the acceptance of the hypothesis.

4. Conclusions and Discussion

The research investigated the adoption of businesses and companies with SMAT and the effects of SMAT adoption on performance. Based on a 5-point scale, SMAT adoption intensities ranged between 3.68 (quality and target costing) and 2.69 (balanced scorecard). 16 out of seventeen techniques had usage intensity above average. Likewise, businesses had over 50% adoption with 12 of these practices. A non- adoption level of above 10% (36.1%) was experienced on the balanced scorecard technique only.

There was a development of a model to explore the effects of SMAT on performance. The main hypothesis (H1) and 3 sub-hypotheses (H₁₋₁, H₁₋₂, and H₁₋₃) were used to test the model.

The initial and primary hypothesis stated that “SMAT adoption has a positive effect on performance and there is a positive meaningful relationship between them”. Findings indicated that SMAT adoption affected performance. The hypothesis became accepted and acknowledged to be true.

Positive meaningful relations were depicted to be enough to accept the SMAT sub-dimensions of strategic costing, competitor-oriented, and customer techniques even though they exhibited a significantly weak effect on performance.

From the findings, a conclusion was made that there was the usage of SMAT by the participating businesses and they exhibited a high level of adoption of these techniques. Similarly, SMAT adoption and the performance relationship were observed and such relationships had very low explanatory power for the performance. Though an average level relationship was witnessed among SMAT adoption and performance in the literature, such relations were very low in some cultures. For the current research, literature support is evident in comparison with the same businesses in various cultures.

The causes of relationships that are weak (correlations) or effect levels should be highlighted in this. The non-objective responses of accounting managers as a result of concerns of the organizational image and the presence of various aspects capable of affecting the performance could have resulted in such a relationship in the present research.

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