

Influencing Factors on the Implementation of Strategy Management Accounting in the Kurdistan Region

Rebin Bilal Mohammed

Department of Accounting and Finance, Administration and Economics, Lebanese French University, Erbil, Iraq
rebin.bilal@lfu.edu.krd

Sardar Jalal Braim

Department of Accounting and Finance, Administration and Economics, Lebanese French University, Erbil, Iraq
sardar.jalal@lfu.edu.krd

Ronyaz Hayyas Mahmood

Department of Business Administration, Administration and Economics, Lebanese French University, Erbil, Iraq
ronyaz.hayyas@lfu.edu.krd

Karkhi Khalid Sabah

Department of Business Administration, Administration and Economics, Lebanese French University, Erbil, Iraq
karkhi.khalid@lfu.edu.krd

ARTICLE INFO

Article History:

Received: 12/1/2023

Accepted: 25/5/2023

Published: Autumn 2023

Keywords: logistics enterprise, Strategic Management Accounting, Implementation, Application, industrial

ABSTRACT

The Purpose of this study is to illustrate the influences Kurdistan Region logistics companies' adoption of strategic management accounting. Design/Methodology/Approach: is the total of 188 accountants and directors from Kurdistan Region Logistics Enterprises filled out questionnaires for this quantitative study (including, transportation, warehousing, and forwarding). Five variables were chosen for correlation and regression analysis to determine the extent to which Kurdistan Region Logistics Enterprises (LEs) using strategic management accounting (SMA). These variables are company sizes and structures, technical advancement, and the cost of applying SMA. The research found a number of main conclusions, The results of Empirical evidence demonstrates a robust connection between these variables

agency, Enterprise
Resource Planning

Doi:

10.25212/lfu.qzj.8.4.51

and the deployment of SMA. The use of SMA by LEs has been widely endorsed since it helps them gather data for making important strategic decisions. The financial and non-financial benefits of SMA applications are enhanced by factors such as company size and organizational structure, technology progress, SMA implementation costs, and strategy. The importance of SMA for management is highlighted by this result. The results of this research offered an outline of the benefits of SMA implementation in business settings. Managers can have a deeper insight into SMA and how it can be applied in the future. In addition, managers will be able to use the study's findings to determine what aspects affect their SMA practices and refine the way they now handle management.

1. Introduction

Many countries, especially emerging ones like Kurdistan Region, credits the logistics business with considerably contributing to their national economic progress in recent years (Doktoralina, 2019). (Phuong, 2020). Despite this, LEs face intense competition due to the high costs, high risks, and high difficulty of technological adoption. (Russel, Thai, 2015) noted that customers and LEs in Kurdistan Region lacked a comprehension of logistics service ideas, contributing to the country's subpar logistics efficiency. There was a serious issue with the quality of service provided; in comparison to other countries, they were far less efficient. Kurdistan Region government has been working on a plan to increase the output and competitiveness of logistics services since 2017. The target date for this increase is 2025. The proposed action was to accelerate the expansion of logistics services, reduce logistics' share of GDP, and propel the country to the top of the Logistics Performance Index (LPI) (Hoang, 2004). Boost the logistics industry's contribution to GDP by 50 percentage points or more compared to other ASEAN countries. Investment logistics infrastructure would increase logistics service provider's ability to compete domestic and international markets (Yeo, 2018). Companies the logistics industry are urged to improve their management structures by using cutting-edge logistics, HR technology, and effective strategic management accounting.



Sustainable development, technical advancement, strong market competition, management changes, and constraints on capital funding are only some of the many difficulties that LEs face in the context of globalization (Collier & Nandan, 2010). Slagmulder (1997) claims that businesses need to evaluate both financial and non-financial data if they want to succeed and grow sustainably. Therefore, SMA is seen as a useful management tool to assist managers in carrying out management functions, as it incorporates and places equal emphasis on both financial and non-financial data in managers' decision-making. Budgeting, executive planning, performance evaluation, and decision-making all benefit from the internal and external data and tools made available by SMA. Due to the large range of available business models and the unique nature of each company's operations, there is no universally accepted approach to SMA (Chowdhury, Habibullah, & Nahar, 2018). Logistics firms rely heavily on the establishment of strategically appropriate information while developing and enacting company strategies in today's ever-changing economic climate (Doktoralina & Apollo, 2019). Various factors, including company size and structure (Hiebl, 2015; Abdel, 2008), the cost of implementing SMA (Hyvonen, 2007), the availability of skilled workers (Howcroft, 2017), the rate of technological development (Abdel, 2008; Kalkhouran, 2015; Hyvonen, 2007; Kordlouie & Hossein) While there have been several papers published on the topic of SMA implementation in Kurdistan Region businesses, this is not the case for the logistics industry. As a result, the purpose of this research is to delve into the elements that influence strategic management accounting procedures to boost the profitability of Kurdistan Region logistic enterprises. Researchers begin by evaluating whether SMA is needed and whether it can be applied in LEs based on the management functions of the managers, and (ii) projecting the determinants, factors, like school size and organizational make-up, technological advancement, SMA implementation expenses, and overall school strategy, all have an impact on how widely SMA is used in elementary and secondary schools. There are three major contributions to be made by our research. To begin, LEs have shown overwhelming support for the use of SMA as a means of informing their strategic decision-making. Second, the usage of SMA has resulted in substantial benefits for accountants and managers in terms of governance functions. Third, the financial and non-financial features of the modern

competitive environment have a beneficial impact on the deployment of SMA due to factors including organizational structure and size, technical innovation, costs of adopting SMA, and strategy.

Below is the paper's remaining content. In Part 2, we'll talk about what appeared to researchers through a survey of the relevant literature. The research strategy and information sources employed in this analysis are discussed below. The research results are presented in Section 4, followed by an analysis of those results in Section 5.

The final chapter wraps up the paper.

2. Theoretical literature review

2.1. SMA Theoretical background

SMA is becoming increasingly important as a strategy for all businesses because of rising levels of competitiveness and globalization (Lord, 1996). By and large, SMA is employed to aid in decision-making and accommodate shifts in international strategy. SMA is evolving into a more dynamic and context-aware system, adapting to the needs of many departments and functions. The scope of operations, industry and available resources inform the development of SMA models and theories. According to Tomkins and Carr (1996a), SMA adds more to corporate strategy because it looks ahead rather than back at past performance. Managers were also shown to benefit from learning about their rivals, different types of analysis, and different accounting responsibilities and processes (Tomkins et al., 1996a). A management control system is aligned with business strategy and aids in strategic investment decision-making, as verified by Kordlouie and Hosseinpour (2018).

According to recent studies conducted by Andon, Thorne, Smith, Hilton, and Langfield (2017), SMA plays a crucial strategic role by assisting in the development and implementation of corporate strategy and empowering managers to enhance the competitive advantages of their businesses. SMA, according to Valanien and Gimauskien (2007), went beyond merely integrating data by also giving data for the execution of strategy. Rather than solely focusing on shareholder value, SMA is now looking to combine solutions for customers, workers, and shareholders. These



methods divide strategies into actionable goals and measurable metrics to track, measure and control strategic advantage and future outcomes. According to (Otley, 2016) and (Hyvonen, 2007) SMA significantly aided in strategic decision-making and increased profitability for businesses. With the use of SMA, managers can gain a deeper comprehension of costs, organize expenses into functional or behavioral categories, and better implement cost allocation for individual products and services. Managers can use the resulting budget reports and cost modifications to inform their investment decisions. Moreover, as Sulaiman and Norhayati (2014) showed, the SMA would be used for strategic planning, the creation of value for businesses, the provision of internal information to aid managers in navigating the future, the cultivation of human resources, and the enhancement of the managerial and accounting skill sets of its practitioners. That's why managers must center their efforts on things like creating a solid infrastructure, attracting and retaining consumers, expanding production, expanding operations, bolstering managerial chops, and improving the quality of their wares.

Supportive management analysis (SMA) must supply enough data for the administrator to carry out all of his or her management duties at every tier of management (Hyvonen, 2007; Nandan, 2010; Kosiyakanont, 2011). In this way, the SMA's contents are evaluated in light of three important facets of management: planning, monitoring, and decision-making. Applying SMA in planning is the first step since it makes use of the information that management accounting supplies (Collier & Nandan, 2010). Managers' plans typically take the shape of a financial budget. Budget reports are plans of action that quantify organizational goals in terms of the entity's financial goals. According to (Guilding, 2008), a competitive edge in the market is a long-term goal of the SMA service's strategic management role. Additionally, a corporation might get an edge over the competition by lowering costs (low-cost leader) or by offering a distinctive product. As a result, SMA is always concerned with how to deliver the best costs, provide long-term economic benefits for firms, or minimize risks if competitors increase their competitiveness while creating any type of long-term production or business plans/projects. Target Costing and Lifecycle Costing are currently two of SMA's most often employed strategic

production cost estimation methods. The literature on this topic is extensive (Fowzia, 2011; Guilding, 2008; Shah, 2011).

Second, using SMA for controlling: (Hyvonen, 2007), (Nandan, 2010), (Kosiyakanont, 2011), and all noted that to assist managers in controlling, managerial accountants must carry out certain tasks, like generating performance reports, documenting all variances, and assessing managerial effectiveness. In order to the management framework, management accountants examine discrepancies between actual results and anticipated outcomes during the course of operations and production. For Front to carry out its role of appraising, Every financial and operational choice the company makes must be analyzed for their impact on the firm as a whole, and this is what strategic management accounting is all about. For the most part, strategic management accounting uses standard financial indicators to help with the assessment of an organization's financial performance and then applies these indicators consistently across the board (Nandan, 2010; Hyvonen, 2007). Because of this, SMA commonly makes use of the following techniques: Here are three approaches: (1) economic value analysis (also known as shareholder value analysis or EVA); (2) benchmarking; and (3) comparing the financial and operational performance of one company to that of its rivals. By applying these methods, a company can determine its most efficient operational strategy, evaluate its performance against industry standards, pursue new avenues of growth, and place greater emphasis on external strategic directions from the competitors (Cinquini & Tenucci, 2010). When applied, SMA provides enterprises with a competitive edge that improves financial and non-financial performance, facilitates the deployment of an efficient measuring system for each activity, and facilitates the incorporation of sustainable development initiatives (Valanciene & Gimzauskiene, 2007). Finally, SMA gives data that may be used by upper-level management to determine whether or not the organization's stated objectives are realistic. Qualitative and quantitative data, as well as some degree of uncertainty, are common components of strategic information, along with its ability to be gathered from both internal and external sources. Strategic cost management, strategic pricing, and value branding are the most popular methods from the SMA family of strategic decision-making approaches. Strategic cost management is the practice of utilizing knowledge about losses gleaned from

business strategies and marketing plans to formulate and refine business strategies, hence fostering long-term competitive advantage. Strategic pricing is the process of determining an optimal selling price by balancing competitive, financial, and market factors (Cadez & Guilding, 2008). To influence long-term advantages and allocate resources to the most successful brands, businesses can adopt value branding by using marketing strategies that effectively connect with and lead customers (Roslender & Hart, 2006). Senior management can benefit from these methods while deciding whether to continue or halt investment and production on a project; whether to reform only a portion of the production process; whether to hold or sell investment capital; etc.

Table 1: Variable measurement

Factor	Cod	Variables	Sources
Size and Organizational structure (ENTE)	ENTE 1	Revenue	Lavia (2015);
	ENTE 2	Number of employees	Cinquini (2010);
	ENTE 3	Total assets	Cadez (2008);
			Pavlatos (2015); Abdel (2008)
	ENTE 4	Each allocated task's specific level of regulations, implementation advice, and performance evaluation.	Pavlatos (2015); Lavia et al. (2015)
ENTE 5	Clarity of the allocation of responsibility and authority between departments and persons		
Costs of implementing SMA (COST)	COST 1	Expenses associated with investing in technology progress to deploy SMA	Hyvonen (2007)
	COST 2	Expenses for consulting SMA experts	
Personnel (PERS)	PERS 1	Knowledge: incorporating accountants' and business managers' expertise and knowledge of SMA	Howcroft (2017); Van (2021)

	PERS 2	Skills: SMA necessitates the employment of very sophisticated and cutting-edge methodologies; hence, accountants and business managers must be able to employ such methods. capabilities for critical thinking and analytical problem solving	
	PERS 3	Attitude: When applying SMA, accountants and business managers must have a proactive, honest, and accountable attitude.	
Technological advancement (TECH)	TECH 1	Enterprise purchases advanced computer systems	Hyvonen (2007); Abdel (2008);
	TECH 2	Enterprise acquires comprehensive accounting and management software (ERP)	Pavlatos (2015); Kalkhouran (2015); Rosli (2014);
	TECH 3	Organizational silos can be broken down with the help of information systems.	Isa (2005); Kordlouie (2018);
Strategy (STRA)	STRA 1	The rate at which a company's logistics offerings evolve in response to market demand	Otley (2016); Cinquini (2010); Cadez (2008);
	STRA 2	The company's innovative nature in creating new logistical processes or markets for companies operating in the same sector.	Hyvonen (2007);
	STRA 3	Enterprise responsiveness to the earliest indications of a market need or chance	



maintaining or selling off investment capital; investing in long-term projects to minimize expenses and maximize output (Kosaiyakanont, 2011; Nandan, 2010; Hyvonen, 2007).

Diverse elements play a role in influencing SMA implementation. Abdel and Luther (2008) surveyed the influence of ten factors on the complexity of SMA application at 658 businesses in the UK food and beverage industry. These determinants included corporate perceptions of environmental instability, organizational structure, business scale, handling system complexity, advanced technical production, Total Quality Management, Just in Time, business strategy, and customer resources. z; and, finally, perishab. Positive effects on SMA adoption were found for the extent to which firms perceived environmental instability, organizational structure, business size, ATM, TQM, JIT, and the robustness of customer resources. According to Ahmad's (2012) research, factors such as company size, market competitiveness, owner/manager involvement, and technologically advanced production can have a significant impact on whether or not SMA is adopted (AMT). Anh's (2012) analysis of 220 Kurdistan Region MNCs found that those facing more intense competition and more decentralized management were more likely to implement SMA strategies, yielding better financial and non-financial outcomes. The effects of company type, size, structure, business strategy, market orientation, and information technology on SMA adoption in Kurdistan Region businesses were analyzed by Van and Lan (2021). All parameters studied appeared to have a considerable impact on SMA deployment, but the results also indicated that different SMA methods were affected in different ways. Managing the business's structure, strategy, and

Table 1: The adoption of market-oriented SMA approaches was influenced by the direction of the measuring market, as shown in Table 1. Assessments of cost and operating efficiency using SMA methods have been influenced by factors such as business characteristics, organizational structure, market orientation, and information technology methods.

To sum up, prior research has shown that SMA is a useful tool to aid managers in delivering adequate information for the performance of various management functions across a range of management levels. Each industry's businesses are unique and require a custom SMA implementation to meet their needs. In this article,

researchers set out to learn more about how SMA is being used by Kurdistan Region logistics companies. This research systematically synthesizes the elements influencing SMA use in LEs, and then suggests a testing model that may adjust its management functions accordingly.

2.2 Hypothesis development

This research sought to answer the question, "What factors influence the selection of applying SMA inherited from the review?" by selecting and analyzing a subset of review factors that are relevant to the characteristics of LEs, factors such as (1) scale and organization, (2) SMA implementation expenses, (3) talent, (4) technical progress, and (5) tactics.

Table 1: summarizes the scales' components as follows:

Factor	Cod	Variables	Sources
The extent of application of SMA (SMA)	SMA 1	Apply SMA effectively to satisfy the planning information requirements.	Collier(2010); Cadez (2008); Shah (2011)
	SMA 2	Use SMA without much effort to fulfill your controlling information demands.	Kosaiyakanont (2011); Collier (2010); Hyvonen (2007)
	SMA 3	Make consistent use of SMA to gather the data you need for assessments.	Nandan (2010); Hyvonen (2007); Cinquini (2010); Valanciene (2007)
	SMA 4	Cinquini (2010); Valanciene (2007); Hyvonen (2007); Nandan (2010);	Cadez (2008); Roslender (2006); Osaiyakanont (2011), Nandan (2010); & Hyvonen (2007)

(Luther, 2008) and (Lavia, 2015) noted that the complexity of an organization's accounting system is correlated with measures of its size, such as revenue, personnel count, and total assets. As businesses grow, more challenges arise in regulating their flow of information and communication; as a result, the sophistication of the

accounting information system is required. Researchers have found that larger companies are more likely to implement SMA approaches (Tenucci, 2010; Guilding, 2008; Pavlatos, 2015). To begin, large, multi-functional businesses tend to standardize processes and procedures and specialize in the implementation of each function. Since this is the case, SMA content is standardized across functional areas. The second advantage of large firms is that their hierarchies are typically more streamlined. As a result, metrics from the SMA, such as accountability accounting, play a larger role in gauging the success of business operations. Finally, the budgeting processes for huge companies are generally convoluted and involve many different groups of people and divisions. Therefore, the more uniform and clear the content of SMA, the greater the organization. Those organizations with multiple tiers of management, as found by Pavlatos (2015), required the assistance of SMA to make strategic decisions. Management accounting report preparation and synthesis features vary by company size and degree of decentralization. How an organization is structured might also have an impact on the metrics used for SMA. To devise an appropriate reward system, SMA must first assess the performance of the team, the group, and the individuals within the team. Therefore, for a company with a complicated structure, and planning-related SMA content, The substance of SMA varies from department to department, making oversight and performance evaluation more difficult. As a result, the following hypothesis H1 is put forth:

H1: The degree to which SMA is implemented is correlated with both the size and structure of an organization.

Expenses incurred (in dollars) to put SMA into action: Hyv onen (2007) found that the expense of implementing cost management accounting was the primary reason why enterprises did not do so. It takes a lot of money to set up a management accounting department, from paying for consultants to shelling out for pricey technology and equipment. In light of this, researchers suggest hypothesis H2:

H2: Reduced initial expenditures for implementing SMA will lead to wider adoption of the strategy.



Management Accounting vs Financial Accounting for Compliance with Government Regulations at All Levels in the Kurdistan Region's Economic Context PER: (Van, 2021). Consequently, if company executives aren't already aware of SMA's many advantages, they're unlikely to adopt them., it is difficult to successfully apply SMA, or it is only employed in a limited scope. Accountants and company executives, in particular, play a vital role in the SMA process. Knowledge, skills, and attitudes are dissected in this research, all of which pertain to human resources. Due to the complexity and novelty of the SMA idea, staff must be well-versed in it. High upfront expenses are incurred by firms when implementing SMA due to the necessity of retooling their accounting department and reorganizing their methods of data collection, processing, and reporting. The use of SMA's cutting-edge tools necessitates a skill set that includes flexibility, critical thinking, and analytical prowess on the part of accountants and business executives (Howcroft, 2017). With regards to mentality, When calculating and displaying SMA, researchers take into consideration factors like an upbeat attitude, candor, and accountability. The influence of human resources on SMA implementation is hotly debated. In the LE sector, training employees follow a methodical, regularly updated procedure that takes into account the latest industry insights and practices. Consequently, LEs are satisfied with their jobs since they have more opportunities to advance and the workforce is better trained. For these reasons, PER is an important consideration while using SMA. Therefore, researchers can state the following as H3:

H3: Staffing levels are positively correlated with SMA implementation depth.

The development of technology (TECH): According to (Hyv, 2007), (Rosli, 2014), and (Pavlatos, 2015), the content of SMA tends to deliver information to aid strategic management and non-financial information as information technology becomes more complicated and up to date. In today's technologically advanced, factory-driven world, managers must take into account not just financial but also non-financial and non-standard aspects of value chain connections. As a result, the more cutting-edge production and management techniques an organization uses, the more non-financial, non-standard, and adaptable the SMA material become. The study of information technology in this paper takes into account both the technological and

informational dimensions of this field. The evolution of technology complicates the task of allocating costs, assessing performance, and appraising investments. Financial managers and auditors in businesses must innovate new methods of accounting to address these issues (Kalkhouran et al., 2015). Managers' need for certain types of data is evolving as a result of the introduction of cutting-edge manufacturing technologies (Isa & Foong, 2005). Several studies have shown that businesses can gain an advantage through the smarter use of IT by improving their software, hardware, and IT employees (Kordlouie & Hosseinpour, 2018). The extent to which businesses use SMA is correlated with the quality of their information system (Rosli et al., 2014; Pavlatos, 2015). Publicly available studies show that IT facilitates SMA implementation in businesses. Therefore, researchers can state the following as H4:

H4: The extent to which SMA is used correlates positively with the technological progress rate.

Otley (2016) concluded that STRA, or business strategy, clearly impacted the development of control systems. The owners of businesses are responsible for setting reasonable expansion targets in light of their company's resources. This means that businesses of all sizes pursue different forms of growth. Long-term development businesses that aim to scale, work in multiple industries, and participate in a competitive market typically employ more cutting-edge contents in their SMA to guarantee the provision of information over the long haul, maintain tight rein over a variety of internal processes, monitor and assess the company's overall performance and boost its ability to compete in the market (Hyv onen, 2007; Cinquini & Tenucci, 2010). According to Cadez and Guilding (2008), businesses that use the Prospector Strategy or the Deliberate Strategy are more likely to use SMA than those that use the opposite strategy. As a result, the innovative and proactive approach to business has a beneficial effect on SMA's implementation. This leads us to the fifth hypothesis, H5:

H5: The degree to which a strategy employs scalar multiplication and division (SMA) is positively correlated with the strategy's success. Strategy affects how much of an

SMA is used favorably. The degree to which a method makes use of SMA is correlated with its prevalence.

The following regression equations were derived from the aforementioned assumptions to depict the relationship between influential factors and the implementation of SMA in LEs:

$$SMA_i = \alpha + \beta_1 ENTE_i + \beta_2 COST_i + \beta_3 PERC_i + \beta_4 TECH_i + \beta_5 STRA_i + \epsilon \quad (1)$$

In which:

Firm size and structure (ENTE), SMA implementation costs (COST), technical progress (TECH), personnel (PERC), and business strategy (STRA) are examples of independent factors.

The level of SMA implementation (SMA) is the dependent variable; α is a constant; β is a coefficient; ϵ is the residual; and i is the observation index.

3. Data and Methodology

3.1. Sample of research

Convenience sampling was used for this investigation. Six hundred of the Kurdistan Region's largest and medium-sized LEs (LEs) were chosen for this dataset. Based on Kurdistan Region government decree No. 38, the data is split in half. There is a first category of businesses that either has a capitalization of above 100 billion VND or employ over 300 people. The second category consists of medium-sized businesses with fewer than 100 full-time employees or an annual revenue of less than 300 billion Kurdistan Region Dong. Collecting and analyzing the data was done quantitatively (Creswell, 2009; Neuman, 2013). In this study, 188 participants were selected at random to fill out an online survey that included a questionnaire the researchers had developed. An illustration of the random stratification of the sample is given by Equation (2).

$$n = (Nt^2 \times pq) / (N \epsilon^2 + t^2 \times pq) \quad (2)$$

Table 2: Survey sample



Enterprise	Number of enterprises sent the questionnaire	Number of enterprises answered the questionnaire	Number of questionnaires sent	Number of questionnaires received
Large enterprise	25	21	50	44
Administrator			25	22
Accountant			25	22
Medium enterprise	100	97	200	144
Administrator			100	72
Accountant			100	72
Total	125	118	250	188

Researchers employ an 80/20 split between large and medium-sized businesses in our sample and a confidence level of 95%, with sample variance not exceeding 7%. One hundred and twenty-five businesses (twenty-five large and one hundred medium) were included in the final sample to turn in surveys. In factor analysis and regression analysis, the minimum number of samples is determined by the formula $n = 50 + 8k$ (Hair, 2010), where k is the number of independent variables in the model. The sample size for this study must be larger than 178 observations because of the large number of independent variables (16 observed variables). From a total of 250 surveys sent out, 210 were filled out and returned. When the data is cleaned up, the number of valid responses for analysis rises to 188, which is sufficient for factor and regression analysis.

Both types of data-gathering objects fall into one of two categories. Executives (including directors and finance directors) and accountants make up Group 1. Chief Financial Officers, Department Heads of Finance and Accounting, Accounting Managers, and Accountants. The first category consists of those who use SMA in a direct capacity within businesses. The second category includes people who use SMA data for administrative purposes. Their combined efforts help shed light on why this survey is so crucial. Researchers distributed the surveys by postal mail, email, and Google Docs. The logistics industries represented by the respondents are diverse, spanning from trucking and shipping to storage and forwarding. Data sample segmentation is shown in table 2 below.

3.2 Research processing

Qualitative and quantitative approaches, implemented in two phases, were used to compile the results of this study (Creswell, 2009). To determine what variables

influence SMA in LEs, a qualitative study was performed using an expert interview guide. Directors, CFOs, and professors are among those being interviewed. In-depth interviews are conducted to round out the data collected through the review of relevant literature. Ten in-depth interviews were used for this research. There are two distinct sections of the questionnaire. Part 1 involves answering 20 questions about the factors influencing SMA adoption on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). Questions are categorized by category, and within each factor, questions are asked from a variety of perspectives. Part 2 of the survey involved collecting data from individuals and organizations based on firm size, length of operation, and industry characteristics.

The second step was analyzing the survey data. After collecting data, Researchers cleaned it, then utilized analytical tools to do things like determine the mean and standard deviation of each variable, (ii) conduct a reliability test on the scale, (iii) conduct a correlation study, and (iv) conduct a multivariate regression analysis. In light of

Table 3: Scale reliability analysis

Variables	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Size and Organizational structure (ENTE): Cronbach's Alpha = 0,863				
ENTE1	15.35106	4.999	.684	.835
ENTE2	15.42021	4.683	.870	.785
ENTE3	15.49468	5.845	.405	.904
ENTE4	15.32447	5.279	.737	.824
ENTE5	15.38830	5.009	.774	.812
Costs of implementing SMA (COST): Cronbach's Alpha = 0,821				
COST1	4.1330	.212	.696	.
COST2	4.1436	.209	.696	.
Personnel (PERS): Cronbach's Alpha = 0,664				
PERS1	7.8936	1.101	.577	.424
PERS 2	7.9202	1.143	.500	.534
PERS 3	8.0904	1.409	.360	.708
The technological advancement (TECH): Cronbach's Alpha = 0,701				
TECH1	7.9468	.810	.658	.112
TECH2	7.9947	.711	.687	.014
TECH3	7.5479	1.436	.035	.961
Strategy (STRA): Cronbach's Alpha = 0,858				
STRA1	7.6383	1.505	.600	.922
STRA2	7.7553	1.341	.791	.747
STRA3	7.7553	1.277	.819	.718
The extent of application of SMA (SMA): Cronbach's Alpha = 0,705				
SMA1	7.6170	1.275	.616	.494
SMA2	7.6649	1.379	.548	.582
SMA3	7.7500	1.461	.414	.749
SMA4	7.8323	1.996	.768	.879

4. Research results

4.1. Reliability test (Cronbach’s alpha)

According to Hair et al. (2010), using Cronbach's alpha coefficient can ensure that all measured variables are comparable. This metric was derived before conducting the exploratory factor analysis in moving irrelevant factors. Because of this, the validity of the empirically-based study hypothesis is strengthened. If the scale's Cronbach's alpha is over 0.6, it's likely to be used. Furthermore, the total variable correlation coefficient must be 0.3 for observed variables to be considered satisfactory. In general, you shouldn't include a variable in your model if its total variable correlation coefficient is less than 0.3.

Table 3 displays the outcomes of the reliability analysis:

Table 3 reveals that the ENTE, COST, PERS, TECH, STRA, and SMA are reliable because their respective Cronbach's alpha values are greater than 0.6. All variables have total correlations greater than 0.3, indicating that all items used to measure them are reliable and valid for use in the study. Five factors and sixteen observed variables meet this investigation's criteria for statistical significance.

4.2. Exploratory factor analysis

According to Hair et al. (2010), EFA attempted to first evaluate convergence value, unidirectional value, and discriminant validity. The data thus obtained was then utilized in a multivariate regression study. Tables 4, and 5 display the outcomes of exploratory factor analysis.

Table 4: KMO and Bartlett’s Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.692
Bartlett’s Test of Sphericity	Approx. Chi-Square	1747.476
	df	105
	Sig.	.000

The KMO and Bartlett's test table 4 demonstrates that the factor analysis was consistent with the data. This means that the KMO coefficient was more than 0.5. It is generally agreed that factor analysis works best with a KMO (Kaiser Meyer Olkin) value between 0.5 and 1.0. In addition, the statistical significance of Bartlett's test (p 0.05) in the table supports the validity of EFA. Accordingly, Researchers can infer that the observed variables have some sort of population-level significance.

Table 5: Rotated Component Matrix

	Component				
	1	2	3	4	5
ENTE2	.9	45			
ENTE5	.8	87			
ENTE4	.8	60			
ENTE1	.7	91			
ENTE3	.5	37			
STRA2		.9	44		
STRA3		.9	10		
STRA1		.6	74	.389	
TECH1			.922		
TECH2			.907		
PERS 1				.8	23
PERS 2				.7	94
PERS 3				.6	85
COST2					.917

COST1					.904
-------	--	--	--	--	------

Note: Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. a. Rotation converged in 5 iterations.

Table 5 shows the findings of factor analysis using principal components analysis and varimax rotation, which indicates that groups of factors derived from observed variables have loading factor coefficients that are quite high (higher than 0.5), and are thus important.

4.3. Correlation analysis

Researchers analyzed the relationship between SMA adoption and five potential predictors. Three observed variables (SMA1 to SMA4) act as indicators of the dependent variable (SMA). Summary of means and results of a correlation test for 5 independent and 1 dependent variable (SMA). Table 6 shows that while controlling for SMA, the independent variables of TECH, PERS, ENTE, COST, and STRA all have Sig. values greater than 0.01. As a result, Researchers can infer a relationship between the independent variables and the dependent ones.

It is possible to do a multivariate regression analysis to forecast the impact of factors on SMA adoption, as the Pearson correlation coefficients vary from 0.122 to 0.847, demonstrating a positive and relatively close association between the independent variables and dependent variables.

Table 6: Correlations

		SMA	TECH	PERS	ENTE	COST	STRA
SMA	Pearson Correlation	1					
	Sig. (2tailed)						
TECH	Pearson Correlation	.622**	1				
	Sig. (2tailed)	.000					
PERS	Pearson Correlation	-.281**	-.165	1			
	Sig. (2tailed)	.004	.096				

ENTE	Pearson Correlation	.847**	.059	.158	1		
	Sig. (2tailed)	.000	.557	.117			
COST	Pearson Correlation	.646**	.073	.002	.176	1	
	Sig. (2tailed)	.000	.471	.987	.079		
STRA	Pearson Correlation	.810**	.557	.122**	.921	.388	1
	Sig. (2tailed)	.000	.216	.000	.735	.640	

4.4. Multivariate regression analysis

Researchers do a multiple regression analysis with STRA as the dependent variable and the independent variables TECH, PERS, ENTE, COST, and STRA as the predictors (SMA). Here are the outcomes:

Table 7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.928 ^a	.862	.858	.20620	.862	226.459	5	182	.000	1.806

Note a. Predictors: (Constant), TECH, PERS, ENTE, COST, STRA

b. Dependent Variable: SMA

In table 7, the corrected square coefficient R2 equals 0.858%, indicating that the five independent variables can account for 85.8% of the variation in the application of SMA to LEs.

Table 8: ANOVA

Model		Sum of squares	Df	Mean square	F	Sig.
1	Regression	48.145	5	9.629	226.459	.000 ^b
	Residual	7.739	182	.043		
	Total	55.884	187			

It is important to keep in mind that a. SMA is the dependent variable, and b. (Constant), TECH, PERS, ENTE, COST, and STRA are the predictors.

Then, Researchers use the Stepwise selection method to do a multiple linear regression analysis, wherein only the relevant independent variables are included in

the model. The regression model utilized here allows for a maximum of five independent variables to be plugged in. There is a Sig. Values of 0.00 (less than 0.05) on the ANOVA tests indicate that the regression model is valid. Thus, it appears that TECH, PERS, ENTE, COST, and STRA all have some bearing on the SMA process. Now Researchers go on to the testing phase, where Researchers look into and try out various hypotheses about the effects of the various model factors on SMA. According to Table 9's regression results, the Sig. The Sig. value of the model indicates that the regression parameters are significant with a 95% degree of confidence. Less than 5% is meaningful. Consequently, the SMA regression equation that predicts these factors is model 2: application is contingent on the following elements:

$$SMA = 0.121 + 0.246 COST + 0.235 PERS + 0.230 ENTE + 0.141 TECH + 0.111 STRA (2)$$

Table 9: Coefficients

Note: a. Dependent Variable: SMA

Model	Unstandardized B Coefficients	Std. Error	Standardized Coefficients (β)	T	Sig.	Collinearity Tolerance	Statistics VIF	
1	Constant)	.121		.141	.000			
	ENTE	.910	.027	.230	33.391	.000	.980	1.120
	COST	.060	.036	.246	1.644	.002	.965	1.136
	PERS	.037	.030	.235	1.251	.001	.985	1.115
	STRA	.010	.030	.111	.337	.006	.770	1.299
	TECH	.038	.030	.141	.275	.004	.748	1.337

Testing hypothesis

Table 6's regression results indicate that the Durbin - Waston of SMEs equals 1.806, showing that there is no autocorrelation. Table 9's regression findings indicate that



VIF coefficients are less than 2.0, indicating that there is no multicollinearity in the regression model.

5. Conclusion

SMA has contributed significantly to the growth of the logistics industry in the Kurdistan Region. However, academics and entrepreneurs do not always concur on the factors that influence SMA adoption. Using a sample of 188 accountants and directors from Kurdistan Region local government entities, researchers employ multivariate regression analysis to determine how company size and structure, technological advancement, and the cost of implementing SMA influence SMA adoption. The data reveal three principal conclusions. SMA is a potent instrument for disseminating intelligence that assists law enforcement in making crucial strategic decisions. Secondly, accountants and managers may find SMA's governance features to be quite useful. In conclusion, the financial and non-financial aspects of the SMA application are enhanced by factors such as size and organizational structure, technological innovation, SMA implementation costs, and strategy. Administrators can now appreciate the significance of SMA due to this discovery. Consequently, the SMA will be unveiled and implemented in a contemporary competitive environment utilizing sustainable development strategies.

Enterprise managers must shift their perception of SMA from that of a strategic management tool to that of a tool that connects the vision of leadership with the activities of employees within the enterprise in order to promote the widespread application of SMA to improve business performance and thereby achieve the predetermined strategic objectives. At each stage of LE development, SMA instruments must be chosen with attention to ensure optimal results. Time, money, and personnel are required for the successful implementation of SMA in LEs. Therefore, each logistics service provider must independently investigate a SMA implementation strategy suited to their specific requirements. The government of the Kurdistan Region should enact laws that encourage the use of SMA to increase the competitiveness of the region's businesses.

Future research may wish to include market-oriented factors and managerial characteristics in order to provide a more comprehensive picture of the factors that influence SMA implementation.

References

- Abdel. K. M. & Luther. R. (2008). The impact of firm characteristics on management accounting practices: A UK-based empirical analysis, *The British Accounting Review*, 40, 2-27.
- Anh.D.N.P (2012). Study the factors affecting the application of strategic management accounting in enterprises, *Journal of Economic Development*, 264, 9-15
- Banomyong, R., Thai, V. V., & Yuen, K. F. (2015). Assessing the national logistics system of the Kurdistan Region. *Asian Journal of Shipping and Logistics*, 31(1), 21-58.
<https://doi.org/10.1016/j.ajsl.2015.03.002>
- Cadez, S. & Guilding, C. (2008). An exploratory investigation of an integrated contingency model of strategic management accounting, *Accounting, Organizations and Society*, 33(7-8), 836–863. <https://doi.org/10.1016/j.aos.2008.01.003>
- Cinquini, L. & Tenucci. A. (2010). Strategic management accounting and business strategy: A loose coupling?, *Journal of Accounting & Organizational Change*, 6(2), 228-259.
<https://doi.org/10.1108/18325911011048772>.
- Chowdhury, T. S., Habibullah, M., & Nahar, N. (2018). Risk and Return Analysis of Closed-End Mutual Fund in Bangladesh. *Journal of Accounting, Business and Finance Research*, 3(2), 83-92. <https://doi.org/10.20448/2002.32.83.92>
- Collier, P., & Nandan, R. (2010). Management Accounting Needs of SMEs and the Role of Professional Accountants: A Renewed Research Agenda. *Journal of applied management accounting research*, 8(1), 65-73.
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approach*. New York: SAGE Publications.
- Dang, V. L. & Yeo, G. T. (2018). Weighing the Key Factors to Improve Kurdistan Region's Logistics System. *The Asian Journal of Shipping and Logistics*, 34(4), 308-316.
<https://doi.org/10.1016/j.ajsl.2018.12.004>



- Doktoralina, C. & Apollo, A. (2019). The contribution of strategic management accounting in supply chain outcomes and logistic firm profitability. *Uncertain Supply Chain Management*, 7(2), 145-156. <https://doi.org/10.5267/j.uscm.2018.10.010>.
- Fowzia, R. (2011). Strategic management accounting techniques: Relationship with business strategy and strategic effectiveness of manufacturing organizations in Bangladesh. *World Journal of Management*, 3(2), 54-69.
- Hair, J.J.F., Anderson, R.E., Tatham, R.L., & Black, W. C, (2010). *Multivariate Data Analysis* (7th ed), Peason Preason Prentice Hall.
- Howcroft, D. (2017). Graduates' vocational skills for the management accountancy profession: Exploring the accounting education expectation-performance gap. *Accounting Education*, 26(5–6), 459–481. <https://doi.org/10.1080/09639284.2017.1361846>
- Hyvonen, J. (2007). Strategy, performance measurement techniques and information technology of the firm and their links to organizational performance. *Management Accounting Research*, 18, 343-366.
- Isa. C. R. & Foong, S.Y. (2005). Adoption of advanced manufacturing technology (AMT) and management accounting practices: the case of manufacturing firms in Malaysia, *World Review of Science, Technology and Sustainable Development*, 2(1), 35. <https://doi.org/10.1504/wrstd.2005.006726>.
- Ju, Y., Wang, Y., Cheng, Y., & Jia, J. (2019). Investigating the Impact Factors of the Logistics Service Supply Chain for Sustainable Performance: Focused on Integrators. *Sustainability*, 11(2), 538. Retrieved from <https://www.mdpi.com/2071-1050/11/2/538>
- Kalkhouran, A. A. N., Rasid, S. Z. A., Sofian, S., & Nedaei, B. H. N. (2015). A Conceptual Framework for Assessing the Use of Strategic Management Accounting in Small and Medium Enterprises. *Global Business and Organizational Excellence*, 35(1), 45–54. <https://doi.org/10.1002/joe.21644>.
- Kober, R., Ng, J., & Paul, B. J. (2007). The interrelationship between management control mechanisms and strategy. *Management Accounting Research*, 18(4), 425-452.
- Kordlouie, H.R. & Hosseinpour, A. (2018). Management Accounting Practices In Small And Medium-Sized Enterprises Regarding The Impact of Organizational DNA, Commercial Potential And Operational Technology, *International Journal of Business Quantitative Economics and Applied Management Research*, 4(8), 22-31.
- Kosaiyakanont, A. (2011). SME Entrepreneurs in Northern



- Thailand: Their Perception of and Need for Management Accounting. *Journal of Business and Policy Research*, 6(3), 143-155.
- Langfield-Smith, K., Smith, D., Andon, P., Hilton, R., & Thorne, H. (2017). *Management accounting: Information for creating and managing value*. McGraw-Hill Education Australia.
- Lavia Lopez, O. & Hiebl, M. R. W. (2015). Management accounting in small and medium-sized enterprises e current knowledge and avenues for further research. *Journal of Management Accounting Research*, 27(1), 81-119. <https://doi.org/10.2308/jmar-50915>.
- Lord, B. R. (1996). Strategic Management Accounting: The emperor's New Clothes? *Management Accounting Research*, 7(3), 347–366. doi:10.1006/mare.1996.0020.
- Neuman, W. L. (2013). *Social research methods: Pearson new international edition: Qualitative and quantitative approaches*. London: Pearson
- Nunnally, J.C. & Bernstein, I.H. (1994). The Assessment of Reliability, *Psychometric Theory*, 3, 248-292.
- Oboh, C. S., & Ajibolade, S. O. (2017). Strategic management accounting and decision making: A survey of the Nigerian Banks, *Future Business Journal*, 3(2), 119-137. <https://doi.org/10.1016/j.fbj.2017.05.004>
- Otley, D. (2016). The contingency theory of management accounting and control: 1980–2014, *Management Accounting Research*, 31, 45–62. doi:10.1016/j.mar.2016.02.001.
- Pavlatos, O. (2015). An empirical investigation of strategic management accounting in hotels. *International Journal of Contemporary Hospitality Management*, 27(5), 756–767. doi:10.1108/ijchm-12-2013-0582.
- Peterson, R. A. (1994). A Meta-Analysis of Cronbach's Coefficient Alpha, *Journal of Consumer Research*, 21, 381-391
- Phuong V, T., Grant, D. B., & Menachof, D. A. (2020). Exploring logistics service quality in Hai Phong, Kurdistan Region. *The Asian Journal of Shipping and Logistics*, 36(2), 54-64. doi:<https://doi.org/10.1016/j.ajsl.2019.12.001>
- Roslender, R., & Hart, S. J. (2003). In search of strategic management accounting: theoretical and field study perspectives, *Management accounting research*, 14(3), 255-279. [https://doi.org/10.1016/S1044-5005\(03\)00048-9](https://doi.org/10.1016/S1044-5005(03)00048-9)
- Rosli, M. H., Said, J., & Mohd, F. (2014). Factors that influence the use of Strategic Management Accounting in Malaysian Government-Linked companies, *Malaysian Accounting Review*, 13(2), 23-46. Available at: <http://arionline.uitm.edu.my/ojs/index.php/MAR/article/view/32>.

- Russell, D. M. & Hoang, A. M. (2004). People and information technology in the supply chain: Social and organizational influences on adoption. *International Journal of Physical Distribution & Logistics Management*, 34(1/2), 102-122. doi:http://dx.doi.org /10.1108 /09600030410526914.
- Shah, H., Malik, A., & Malik, M. S. (2011). Strategic management accounting - A messiah for management accounting. *Australian Journal of Business and Management Research*, 1(4), 1-7.
- Slagmulder, R. (1997). Using management control systems to achieve alignment between strategic investment decisions and strategy. *Management Accounting Research*, 8, 108-139. https://doi.org/10.1006/mare.1996.0035
- Sulaiman, N.N & Norhayati, A. (2014). *Management accounting practice in selected Asian countries*, *Managerial Auditing Journal*, 19(4), 493 - 50.
- Tayles M. (2011). *Strategic Management Accounting*. In: *AbdelKader M.G. (eds) Review of Management Accounting Research*. Palgrave Macmillan, London. https://doi.org/10.1057/9780230353275_2.
- Tomkins. C. & Carr. C. (1996a). Editorial Strategic Management Accounting, *Management Accounting Research*, 7, 165-167.
- Van. T.H. & Lan. T.T.P. (2021). Factors affecting the implementation of strategic management accounting. *Journal of Finance and Marketing*, 59. https://doi.org/10.52932/jfm.vi59.35.
- Valančienė, L. & Gimžauskienė, E. (2007). Changing Role of Management Accounting: Lithuanian Experience Case Studies, *Engineering Economics*. 5(55), 16-23.

کاریگه‌ری هۆکاره‌کان له‌سه‌ر جیبه‌جیکردنی ستراتیژی به‌په‌بهردنی ژمیریاری

له‌هه‌ریمی کوردستان

پوخته:

ئهم تووژینه‌وه‌یه به‌ئامانجی زیاتر زانینی ئهو هۆکارانه‌ی که کاریگه‌ری له‌سه‌ر گرتنه‌به‌ری ستراتیژی به‌په‌بهردنی ژمیریاری که له کۆمپانیاکانی پیداو‌یستی خزمه‌تگوزاری له‌هه‌ریمی کوردستان دا هه‌یه. شیوه‌کاری / شیوازاناسی / رېباز: پارسیه‌که له لایهن (188) ژمیریاری و به‌په‌بهر له کۆمپانیا پیداو‌یستی خزمه‌تگوزاری هه‌ریمی کوردستان پرکراوه‌ته‌وه بۆ ئهم تووژینه‌وه‌یه چه‌ندایه‌تییه (له‌وانه گواستنه‌وه و

خەزەنکردن و بارکردن). پێنج هاوپیچی و شیکردنەوهی پاشەکەوت هەلبژێردان بۆ دیاریکردنی رادەى بەکارهێنانی کۆمپانیای ستراتیژی بەرپۆهبردنی ژمیریاری (SMA) گۆراوهکان بریتین لە (قهبارەى کۆمپانیا و پیکهاته، تەکنیکی پێشکەوتن ، و تیچووی جێبهجێکردنی ژمیریاری ستراتیژی بەرپۆهبردن (SMA) ئەنجامەکان: بەلگەى ئیجازی پەيوەندییەکی پتەوی بین ئەم گۆراوانە و فراوانی حسابی بە فراوانی لەلایەن LES بەکارهاتووە چونکە یارمەتی تەکنەلۆجیا و تیچووی جێبهجێکردنی ئیس ئیم ئەى و ژمیریاری ستراتیجی بەرپۆهبردن ژمیریاری بۆ ئەم ئەنجامە، گرنگی ژمیریاری ستراتیژی بەرپۆهبردنی ئیس ئیم ئەى بۆ بەرپۆهبردن تیشکی خستە سەر. ئەنجامەکانی ئەم تووژینهوهیه پوختهیهکی لە سوو دەکانی جێبهجێکردنی ئیس ئیم ئەى لە ریکبەندەکانی بازگانیدا دابین کرد. بەرپۆهبەرەکان دەتوانن تیگەبشتنێکی قولتر بەدەست بهێنن لە ئیس ئیم ئەى وه چۆن دەتوانرێت لە داها توودا جێبهجێ بکریت. ئەوان دەتوانن ئەنجامەکانی تووژینهوهیه بەکاربهێنن بۆ دیاریکردنی ئەو لایەنانەى که کاریگەریان لەسەر شیوازی ستراتیژی بەرپۆهبردنی ژمیریاری ئیس ئیم ئەى ههیه و بۆ باشتکردنی شیوازی مامەلەکردنیان لەگەڵ بەرپۆهبردندا .

العوامل المؤثرة على تنفيذ المحاسبة الإدارية الاستراتيجية في إقليم كردستان

الملخص:

هدفت هذه الدراسة لمعرفة المزيد عن العوامل التي تؤثر على تبني شركات الخدمات اللوجستية في إقليم كردستان لمحاسبة الإدارة الاستراتيجية . التصميم / المنهجية / النهج: تم ملء الاستمارة الاستبانة من قبل (188) محاسباً ومديرًا من الشركات اللوجيستية لإقليم كردستان لهذه الدراسة الكمية (بما في ذلك النقل والتخزين والشحن). تم اختيار خمسة متغيرات لتحليل الارتباط والانحدار لتحديد مدى استخدام الشركات اللوجستية لإقليم و ان المتغيرات هي (حجم الشركة وهيكلها ، (SMA) لمحاسبة الإدارة الاستراتيجية (LEs) كردستان النتائج: يوضح الدليل التجريبي عن (SMA) والتقدم التقني ، وتكلفة تطبيق المحاسبة الإدارية الاستراتيجية تم استخدام المحاسبة SMA. وجود علاقة قوية بين هذه المتغيرات و الانتشار المحاسبة الإدارية الاستراتيجية على نطاق واسع لأنه يساعدهم في جمع البيانات لاتخاذ قرارات LEs من قبل SMA الإدارية الاستراتيجية من خلال SMA استراتيجية مهمة. و تعزيز الفوائد المالية وغير المالية لتطبيق المحاسبة الإدارية الاستراتيجية عوامل مثل حجم الشركة والهيكل التنظيمي والتقدم التكنولوجي وتكاليف تنفيذ المحاسبة الإدارية الاستراتيجية SMA والاستراتيجية. بفضل هذه النتيجة تم تسليط الضوء على أهمية المحاسبة الإدارية الاستراتيجية SMA في SMA للإدارة. قدمت نتائج هذا البحث الخطوط العريضة لفوائد تطبيق المحاسبة الإدارية الاستراتيجية



SMA إعدادات الأعمال. حيث يمكن للمديرين الحصول على نظرة أعمق حول المحاسبة الإدارية الاستراتيجية وكيف يمكن تطبيقها في المستقبل. فضلا عن انهم يتمكنون من استخدام نتائج الدراسة لتحديد الجوانب التي تؤثر الخاصة بهم وتحسين الطريقة التي يتعاملون بها الآن مع SMA على ممارسات المحاسبة الإدارية الاستراتيجية الإدارة .