

Market Environment Accounting of Costmetics Business in Thailand: Effects on Sustainable Competitive Advantage and Business Performance

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ABSTRACT

The objective of this study is to investigate the effects of market environment accounting on sustainable competitive advantage and business performance via the moderator of learning capability. Data were collected from 391 cosmetics businesses in Thailand. Both structural equation model and multiple regression analysis are applied to examine the research effects. The results suggest that market environment accounting plays an important role in explaining and determining both sustainable competitive advantage and business performance. Next, sustainable competitive advantage has a significant effect on business performance and it is a mediator of the market environment accounting-business performance relationships. In addition, learning capability is not the moderator of the research effects. Moreover, market environment accounting helps firms achieve both sustainable competitive advantage and business performance. The results also suggest that firms need to support their employees in understanding and utilizing the concepts of market environment accounting in an organization by explicitly allocating and investing their budgets for development and improvement of the market environment accounting system. To conclude, successful market environment accounting is positively related to potential competitive advantage, long-term performance and sustainable success and growth.

Keywords: Market Environment Accounting, Sustainable Competitive Advantage, Learning Capability, Business Performance

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INTRODUCTION

Nowadays, market and competitive environments have been continuously and rigorously changeable, uncertain, and turbulent due to the factors such as customer expectation, competitor competitiveness, product diversity, service form, technology change, regulation compliance, and health maintenance. The intensity of market competition has created dynamic and fast-changing business and competitive environments (Lichtenthaler, 2022). These environments have critically affected firms' abilities and capabilities of business strategies and techniques. Best business strategies and techniques can enhance their market position and competitiveness and influence their goal achievement and superior success, survival and sustainability well in current, future and long-term operations. Accordingly, to compete the environments and sustain their optimizing benefits and returns firms must create and deploy their potential and capable business strategies to stay competitive and be able to face with significant growth opportunities in more rapidly and increasingly changing business environments (Quaye & Mensah, 2019). In this study, a valuable strategy called "market environment accounting" entails an integration of knowledge and understanding of accounting-marketing interface. It is a source of sustainable competitive advantage in business operations, activities and practices. It helps create sustainable competitive advantage and achieve outstanding business performance. Effective market environment accounting can help firms achieve continuous competitiveness and sustainable success in future and long-term operations.

Market environment accounting is a mechanism for creating and developing an understanding of competitive conditions and situations through an establishment of a repository of competitive information that is a way which this information is enveloped in a process of organizational planning and decision. This information can be used for firms' business competition analysis and their condition and situation assessment. It embraces an organization-wide view in a process of creating value for competitions and yielding a profit to the firms. Thus, market environment accounting has been a valuable business tool that can help promote and achieve market position, sustainable competitive advantage and long-term business performance. In addition, firms with market environment accounting can identify, measure, analyze, assess, and communicate

information-related competitive conditions and situations which is used for management of organizational planning and decision (Ngo, 2021). Market environment accounting presents an understanding of particular general market forces other than customers and competitors. It fulfills an adequate basis for an achievement of firms' sustainable competitive advantage and an enhancement of their business performance (Özer, Koçak, & Çelik, 2006). The extraneous factors are government regulations and changing conditions industry-wide, technology and environmental factors. Firms with market environment accounting can effectively respond to their operating environments through managing their limitations and threats and utilizing their opportunities. They have successfully learned about market conditions, prosperously adapted their businesses according to observed changes and potentially achieved in a positive direction. Therefore, market environment accounting is a key determinant of sustainable competitive advantage and business performance. A success of market environment accounting implementation can directly link to firms' sustainable competitive advantage and superior business performance.

Interestingly, sustainable competitive advantage is a consequence of applying market environment accounting. It refers to an ability of firms to continuously adjust their strategy to maintain a competitive advantage in a changing environment (Li et al., 2021). It is an ability to outperform their rivals in winning the fast-changing marketplace through achieving a continual competitive advantage that is irreplaceable with their rivals. It occurs when other firms do not replicate benefits of competitive advantage. Firms with sustainable competitive advantage can make full use of existing business opportunities for organizational capital while exploiting other resources to guarantee sustainability and replicability of their competition position for the future (Hossain et al., 2022). They can achieve superior long-term business performance. Therefore, sustainable competitive advantage is an effectiveness of market environment accounting application. It critically affects business performance. Similarity, a mediation analysis can identify and explain that market environment accounting cannot directly influence business performance, and instead does so by means of sustainable competitive advantage. Thus, market environment accounting influences sustainable competitive advantage, which in turn influences business performance. It is also a mediator of the market environment accounting-business performance relationships.

In addition, business performance is an effective result of implementing market environment accounting in achieving sustainable competitive advantage. It is defined as an indicator which measures how well a firm accomplishes its objectives (Prakash et al., 2017). It considers multiple and non-financial objectives under influences of fuzzy and uncertain external environments involving outside-in perspective for mobilizing diverse resources through open information flow. It presents a desired outcome of doing firms' business operations, activities and practices. Moreover, business performance is an overall well-being of a business according to their results measured against assets committed to achieving the set goals. It measures several financial and non-financial outcomes, namely sales growth, profit margin on sales, return on investment, market share, return on assets, overall profitability, customer acceptance, executive satisfaction, and innovation growth (Gyedu et al., 2021). Thus, business performance is an operational ability of firms to meet goal achievement and desire. It also translates their strategies into desired behaviors and results.

To strengthen the market environment accounting-business performance relationships, learning capability is considered a moderator of these relationships. It is defined as a capability to learn from internal and external sources, improve existing knowledge, develop innovative knowledge, and adjust and modify their behaviors to reflect new cognition situations, with a view to improving their performance (Dhir & Dhir, 2018). It is an ability and proficiency of firms to obtain knowledge from past strategic actions and subsequently leverage that knowledge to adjust their strategies. It revisits, recreates and executes revised strategies through learning at each level of their organizations as a response to changing environments. Firms with learning capability can identify new opportunities and simultaneously gain and sustain competitive advantage that link to their superior and outstanding business performance. They present their features and management qualities directed toward a promotion and support of improving productivity, sensing market opportunities, adjusting business activities, minimizing cost, and creating new product delivery methods to the market (Salisu & Bakar, 2020). Accordingly, learning capability is a strategic ability of firms to achieve business survival in dynamic business environments. It can create superior customer value, enhance competitive advantage and achieve distinctive performance. Thus, learning capability is considered a moderator of the market environment accounting-business performance relationships.

This study aims at investigating the effects of market environment accounting on business performance of cosmetics businesses in Thailand. It also examines the mediating effects of sustainable competitive advantage and the moderating effects of learning capability of the research relationships. The key research question is how market environment accounting affects business performance. The specific research questions are: (1) How market environment accounting affects sustainable competitive advantage, (2) How sustainable competitive advantage affects business performance, (3) How sustainable competitive advantage mediates the research relationships, and (4) How learning capability moderates the research relationships.

In this study, cosmetics businesses such as skin cares and health cares in Thailand are one of the major industries that have grown at average 10-20% in the past ten years. They are ranked the seventeenth leader of cosmetics production in the world. In addition, cosmetics businesses in Thailand are ranked the tenth leader in the world (<https://marketeeronline.co/archives/216591>). They can produce cosmetics of Thai brands that have served markets of ASEAN, Japan, Australia, Hong Kong, and China. As a result of these operations, they are the second leading cosmetics exporter in ASEAN countries while Singapore is ranked first. Each year, cosmetics businesses in Thailand have a continuous growth rate because Thai people of all genders and ages have been focusing more on health and beauty. As a consequence, cosmetics products from Thailand and international imports can contribute tremendous sales and profits to these businesses. Growth in cosmetics related businesses has boomed in recent years. However, competition in cosmetics businesses is very rigorous. New ventures of these cosmetics businesses have established in each year while some of these businesses went to bankruptcy. Their marketing and accounting capabilities, competencies and abilities have become strategic business tools in helping gain outstanding competitiveness and sustainable success. Thus, the abilities of understanding market and competitive environments of cosmetics businesses can help enhance their sustainable competitive advantage and superior long-term performance. To succeed, survive and sustain in the rigorous competitive markets and environments, market environment accounting can help create new products, source and juggle ingredients to keep costs under control, comply with new regulations, and satisfy end users by adapting formulas to fit around new trends. Accordingly, an application of market environment accounting in Thai cosmetics businesses have the

potential to enhance their sustainable competitive advantage, great business performance and long-term sustainability. Therefore, cosmetics businesses in Thailand are considered the appropriate samples of the study.

This research paper is structured as follows. First, the knowledge-based view of the firm allows for addition of market environment accounting that links to both sustainable competitive advantage and business performance through the moderator of learning capability. This study then presents the research design, data analysis, the results, discussion, contributions, and future research directions.

RELEVANT LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT OF THE RESEARCH RELATIONSHIPS

Knowledge-based view of the firms (KBV) is a valuable theory that is applied to explain the effects of market environment accounting on business performance. It is a management concept of organizational learning that provides firms with potential and usable strategies for achieving sustainable competitive advantage and long-term success. In addition, KBV considers knowledge as the most strategically significant resource of firms that is a major determinant of sustained competitive advantage and superior firm performance (Hoskisson et al, 1999). Greater knowledge-based resources and capabilities critically influence firms to achieve more sustainable competitive advantage and business performance. In this study, market environment accounting is treated as a firm's important and capable knowledge in an organization. It is a key driver for explaining and determining both sustainable competitive advantage and business performance. Next, sustainable competitive advantage is proposed to mediate the research relationships and learning capability is proposed as the moderator of all research relationships. Figure 1 shows the conceptual model of the market environment accounting-business performance relationships.

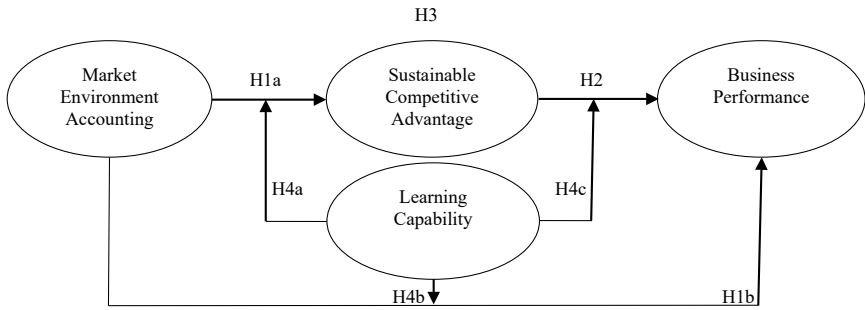


Figure 1: A Conceptual Model of the Market Environment Accounting-Business Performance Relationships

Business Performance

Business performance is a valuable result of utilizing market environment accounting. It represents a success of firms' business operations, practices and activities. In this study, business performance refers to an indicator which is used to measure how well a firm accomplishes its objectives (Prakash et al., 2017). It is an operational ability to satisfy the desires of key shareholders of a firm. It is important to implement business strategies to maintain competitive advantage into desired behaviors and results through achieving pre-selected goals in terms of a wide range of indicators related to profitability, growth or social performance. It considers multiple and non-financial objectives under influences of fuzzy and uncertain external environments involving outside-in perspective for mobilizing diverse resources through open information flow. It presents a desired outcome of effectively doing firms' business operations, activities and practices. In addition, business performance is an overall well-being of a business according to their results measured against assets committed to achieving the set goals. It plays a vital role in the continued existence of profit, operational efficiency and organizational effectiveness through focusing on cost reduction and efficiency, complying with regulations taking into account the stakeholders of good practice and jointly leading to stakeholders and customer attractiveness (Fikri et al., 2022). It measures several financial and non-financial outcomes, namely sales growth, profit margin on sales, return on investment, market share, return on assets, overall profitability, customer acceptance, executive satisfaction, and innovation growth (Gyedu et al., 2021). Thus, it consists of absolute

values of performance indicators based on pre-determined financial or non-financial indicators. Furthermore, business performance reflects how a firm has been doing so far relative to its resources, assets and capabilities in a competitive market and environment. It can be measured through brand performance (brand awareness, brand image, reputation, and brand loyalty), market performance (acquiring new customers, retaining current customers and achieving customer satisfaction) and business growth (higher prices charged to customers, increase in market share and greater share of wallet) (Laukkanen et al., 2013). Accordingly, business performance is an ability of a firm to access the level of success based on financial and non-financial indicators and other indicators. As mentioned earlier, brand performance, market performance and business growth are applied to provide business performance measurement in this study.

Market Environment Accounting

Interestingly, market environment accounting plays a significant role in determining and explaining business outcomes as sustainable competitive advantage and business performance. It refers to a process of identification, measurement, analysis, assessment, and communication information-related competitive conditions and situations which is used for managing organizational planning and decision making (Ngo, 2021). It is generally accepted as encompassing an organizational emphasis on meeting profitable and competitive markets and environments. It involves providing information about a firm's competitive circumstances and market possibilities to respond to and satisfy markets' needs and wants. Firms can focus more on an understanding of particular general market forces than customers and competitors. It fulfills an adequate basis for an achievement of firms' sustainable competitive advantage and an enhancement of their business performance (Özer, Koçak, & Çelik, 2006). These market forces include extraneous factors, namely government regulations and changing conditions industry-wide, technology and environmental factors. This understanding can help firms to successfully respond to markets' conditions and situations. It also provides great operational strategies and techniques to deal with these market environments and achieve business success. Better market environment accounting knowledge and understanding can promote and enhance firms to gain competitive advantage and achieve business performance in a sustainable long-term aspect. In addition, market

environment accounting is a mechanism for developing an understanding of competitive conditions and situations through an establishment of a repository of competitive information that is a way which this information is enveloped in a process of organizational planning and decision (Nguyern, 2018). It provides an insight into changes in competitive positioning and organizational focus on brand, motivations for the content of accounting information and informality in competitive market and environment analysis and evolves in which information for decision is fashioned by firms' markets and environments. It can help assess business competition and situation. Successful utilization of market environment accounting can enhance value for competitions and yield a profit to the firms. Firms with greater market environment accounting application can achieve more sustainable competitive advantage and obtain longer business performance. Accordingly, market environment accounting application tends to positively determine both sustainable competitive advantage and business performance. It is also hypothesized to positively affect these outcomes. Therefore,

H₁: Market environment accounting has a significant positive effect on (a) sustainable competitive advantage and (b) business performance.

Sustainable Competitive Advantage

Sustainable competitive advantage is proposed to be a valuable consequence of applying market environment accounting and a critical determinant of business result and outcome. It refers to a long-term benefit resulting from unique value creation processes asynchronously with potential competitors that cannot be easily copied (Quaye & Mensah, 2019). It can be achieved through a role of leadership and an effectiveness of implementing strategies that affect firms' environmental activities in order to achieve business performance in a competitive market (Arsawan et al., 2022). Firms with sustainable competitive advantage can provide unique and valuable strategies with potential and dynamic rivals which cannot be imitable. They attain sustainable competitive advantage by gaining deeper insights into customer needs and trends, exploring new business opportunities and enhancing outstanding business success. They can provide superior customer value and achieve relative lower cost for a long period of time and create superior performance. Moreover, sustainable competitive advantage is defined as an ability of firms to continuously adjust their

strategy to maintain a competitive advantage in a changing environment (Li et al., 2021). It also refers to firms' possibilities of maintaining a competitive advantage rather than merely achieving it at one particular moment (Lichtenthaler, 2022). It is the competitive advantage that competitors cannot duplicate. It is an ability to outperform their rivals in winning the fast-changing marketplace through achieving a continual competitive advantage that is irreplaceable with their rivals. It occurs when other firms do not replicate benefits of competitive advantage. Accordingly, firms with sustainable competitive advantage can make full use of existing business opportunities for organizational capital while exploiting other resources to guarantee sustainability and replicability of their competition position for the future (Hossain et al., 2022). They can achieve superior long-term business performance. In this study, market environment accounting is the antecedent of firms' sustainable competitive advantage while sustainable competitive advantage critically affects their business performance. Thus, sustainable competitive advantage is also hypothesized to be a mediator of the market environment accounting-business performance relationships. It is a go-between for market environment accounting and business performance. In a mediation model, market environment accounting cannot directly influence business performance, and instead does so by means of sustainable competitive advantage, a 'middle-man'. Therefore,

- H₂:** Sustainable competitive advantage has a significant positive effect on business performance.
- H₃:** Sustainable competitive advantage mediates the market environment accounting-business performance relationships.

Learning Capability

Learning capability is considered a moderator of the relationships among market environment accounting, sustainable competitive advantage and business performance. It refers to an ability of firms to create an enabling platform to generate, acquire and integrate knowledge to modify their behaviors for improving performance (Freixanet & Federo, 2022). It focuses on firms' proficiency at deriving knowledge from past strategic actions and subsequently leveraging that knowledge to adjust their strategies. It is an ability of firms to revisit, recreate and execute the revised strategies

through learning at each level of an organization as a response to changing environments. Firms with great learning capability can align, execute and renew their strategies according to the latest trends to remain competitive. They can provide the abilities to increase, renew and exploit their knowledge base to respond to environmental changes and reduce uncertainty faster than their competitors and enhance their competitive advantage. Thus, they can adapt it to help identify changing market trends and satisfy customer needs better than their competitors. Accordingly, learning capability is associated with higher firm success and profitability. In addition, learning capability is defined as a capability to learn from internal and external sources, improve existing knowledge, develop innovative knowledge, and adjust and modify their behaviors to reflect new cognition situations, with a view to improving their performance (Dhir & Dhir, 2018). It is a firm's ability to process knowledge and modify its behavior to reflect the new cognitive situation (Ho, Ahmad, & Thurasamy, 2013). It presents the organizational and managerial characteristics that facilitate the organizational learning process or allow an organization to learn. It is a source of competitive advantage and helps firms achieve superior performance. Firms with learning capability can identify new opportunities and simultaneously sustain competitive advantage that link to their outstanding business performance. They present their features and management qualities directed toward a promotion and support of improving productivity, sensing market opportunities, adjusting business activities, minimizing cost, and creating new product delivery methods to the market (Salisu & Bakar, 2020). They can improve their results and performance. As mentioned earlier, learning capability positively affects competitive advantage and business performance. To strengthen the research relationships, learning capability is hypothesized to moderate the relationships among market environment accounting, sustainable competitive advantage and business performance. It is a variable that can strengthen (a) the market environment accounting-sustainable competitive advantage relationships, (b) the market environment accounting-business performance relationships and (c) the sustainable competitive advantage-business performance relationships. It can also change the direction of these relationships. Therefore,

H₄: Learning capability moderates (a) the market environment accounting-sustainable competitive advantage relationships, (b) the market environment accounting-business performance relationships and

(c) the sustainable competitive advantage-business performance relationships.

RESEARCH DESIGN AND METHODOLOGY

Sample Selection Procedure and Data Collection

Selected by quasi-random systematic sampling from the list of the Department of Business Development, Ministry of Commerce, Thailand (www.dbd.go.th), this study included 1,000 key participants from cosmetics businesses in Thailand. The key informants were accounting executives, namely chief accounting officer, accounting director, accounting manager or other accounting executives. They have prepared and reviewed appropriate ledger entries and reconciliations, maintained the general ledger system, prepared monthly, quarterly and annual financial statements as assisting with regulatory reporting as applicable, researched accounting issues for compliance, coordinated the budget process, and hired, trained and supervised accounting staffs. In addition, the questionnaire with dichotomous scales was utilized as a key instrument for collecting data. It is an appropriate research instrument of the study because it can help collect data from a large sample and anonymous participants and increase data collection efficiency. The mailed questionnaire was distributed to these participants. They were requested to complete the questionnaire and return it to the researchers. The final questionnaire yielded 391 usable returns after eliminating those containing inaccurate or invalid answers. The response rate of approximate 39.1 per cent was considered high for a questionnaire-based survey. With an appropriate follow-up procedure suggested by Aaker, Kumar, and Day (2001), the response rate for a mailed survey as being greater than 20 was considered acceptable. For verifying potential non-response bias, a comparison of the first and the second wave data as recommended by Armstrong and Overton (1977) was considered. This study had no response bias problems for investigating the research relationships because there were no statistically significant differences between the first and the second groups at a 95% confidence level as a year of business operations ($t = 0.13, p > .05$), a number of employees ($t = 0.17, p > .05$) and an amount of capital invested ($t = 0.15, p > .05$).

Measures

All measures were modified from previous studies. All constructs were designed using a self-assessment report with a semantic differential scale approach of five-point Likert scale of agreement with statements containing the items, ranging from “1 = strongly disagree” to “5 = strongly agree”, except for control variables. The questionnaire was developed using simple language for the research objectives to be achieved. Firstly, market environment accounting was assessed using ten items that indicated the effects, utilization of government regulations, impacts and benefits of changing conditions of industry-wide, technology and environmental factors (Özer et al., (2006). Secondly, sustainable competitive advantage was assessed using seven items that indicated gaining deeper insights into customer needs, exploring new business opportunities and enhancing outstanding business operations through providing superior customer value, achieving relative lower cost for a long period of time and outperforming rivals in winning the fast-changing marketplace (Arsawan et al., 2022). Thirdly, learning capability was assessed using ten items that indicated a capability of firms to learn from internal and external sources, improve existing knowledge, develop innovative knowledge, and adjust and modify their behaviors to reflect new cognition situations, with a view to improving their performance (Dhir & Dhir, 2018). Finally, business performance was assessed using nine items that indicated an overall well-being of a business according to its results measured against assets committed to achieving the set goals, including sales growth, profit margin on sales, return on investment, market share, return on assets, overall profitability, customer acceptance, executive satisfaction, and innovation growth (Gyedu et al., 2021). Measurements of these constructs are self-developed from existing literature as shown in Appendix A.

Moreover, control variables were also investigated, including operational age (OA), a number of employees (NE) and an amount of invested capital (AI). Firstly, operational age (OA) was measured by the number of years a firm had been in existence by using a dummy variable as less than 5 years = 0 and equal to or greater than 5 years = 1. Secondly, a number of employees (NE) was measured by the number of employees in a firm by using a dummy variable as less than 100 employees = 0 and equal to or greater than 100 employees = 1. Lastly, an amount of invested

capital (AI) was measured by the amount of money a firm had invested in doing business by using a dummy variable as less than 25 million baht = 0 and equal to or greater than 25 million baht = 1.

Factorability, Reliability and Validity

To verify factorability, reliability and validity of the research instrument, factor loadings, Cronbach alpha coefficients and item-total correlations were examined (Hair et al., 2010). Firstly, the factorability was used to test whether the correlation matrix among a set of variables was an identity matrix. If there was no common variance. It reduced a set of variables by extracting all their commonalities into a smaller number of factors. To measure the factorability of the scales factor loading test was conducted. The factor loadings of all items were greater than 0.60. Secondly, the reliability mainly involved an internal consistency, which referred to the degree of accordance of items that made up the scales. To measure the reliability of the scales, Cronbach alpha test was conducted. Cronbach alpha coefficients as well as the composite reliability were achieved with scoring greater than 0.07. Lastly, the validity was the extent to which a test accurately measures what it was supposed to measure. It refers to the degree to which evidence and theory supported the interpretations of test scores entailed by proposed uses of tests. To measure the validity of the scales, item-total correlation test was conducted. Item-total correlations were greater than 0.30, indicating the achievement of the convergent validity. Based on these criteria, all the indices could be accepted. Table 1 presents the factorability, validity and reliability results of multiple-item scales used in this study.

Table 1: Results of Measure Validation

Items	Factor Loadings	Item-total Correlation	Cronbach Alpha
Market environment accounting (MA)	0.74-0.87	0.72-0.85	0.94
Sustainable competitive advantage (SA)	0.79-0.91	0.79-0.92	0.90
Learning capability (LC)	0.85-0.90	0.86-0.90	0.84
Business performance (BP)	0.73-0.86	0.75-0.85	0.92

Measurement Model Analysis

To analyze the measurement model of the research relationships, the maximum likelihood estimation as the most important method was employed to measure the model fit (Awang, 2014). It included comparative fit index (CFI), goodness of fit index (GFI), incremental fit index (IFI), and root mean square error of approximation (RMSEA). The measurement model was performed with all constructs included. Firstly, the comparative fit index (CFI) was used to analyze the model fit by examining the discrepancy between the data and the hypothesized model, while adjusting for the issues of sample size inherent in the chi-squared test of model fit, and the normed fit index. CFI values ranged from 0 to 1, with larger values indicating better fit. Secondly, the goodness of fit index (GFI) was a measure of fit between the hypothesized model and the observed covariance matrix. The GFI ranged between 0 and 1, with a value of over. Thirdly, the incremental fit index (IFI) was based on the comparison of the fit of a target model with that of a null model. It was a part of a family of relative fit measures for structural equation modeling that involved locating a model of interest within a continuum of models from the worst fitting baseline model to the perfect fitting or saturated model. IFI values ranged from 0 to 1, with larger values indicating better fit. Lastly, the root mean square error of approximation (RMSEA) was a measure of the estimated discrepancy between the population and model-implied population covariance matrices per degree of freedom. The RMSEA ranged from 0 to 1, where smaller values indicated better fit. The model for indices was achieved (CFI = 0.91, GFI = 0.93, IFI = 0.94, and RMSEA = 0.05). According to Hair et al. (2010), this study could continue further when at least three of the indices met the threshold requirement. Thus, the initial test of the measurement model resulted in the good fit to the data.

Statistical Analysis

In this study, direct, mediating and moderating relationships are empirically investigated. Structural equation model was used to examine (a) the market environment accounting-sustainable competitive advantage relationships, (b) the market environment accounting-business performance relationships and (c) the sustainable competitive advantage-business performance relationships. In addition, multiple regression analysis was employed to investigate the moderating effects of learning capability on

(a) the market environment accounting-sustainable competitive advantage relationships, (b) the market environment accounting-business performance relationships and (c) the sustainable competitive advantage-business performance relationships. To verify and test assumptions of linear regression, multiple regression analysis is an analysis that assesses whether one or more predictor variables explain the dependent (criterion) variable. All five key assumptions (linear relationship, multivariate normality, no or little multicollinearity, no auto-correlation, and homoscedasticity) are considerably accepted. The results of this study are presented in the next section.

RESULTS AND DISCUSSION

The descriptive statistics and correlation matrix for all variables (market environment accounting, sustainable competitive advantage, learning capability, and business performance) are presented in Table 2. Multicollinearity is a statistical concept where several independent variables in a model are correlated. Two variables are considered perfectly collinear if their correlation coefficient is +/- 1.0. Multicollinearity among independent variables will result in less reliable statistical inferences. It might occur when inter-correlation in each predict variable is more than 0.80, which suggests a strong relationship (Hair et al., 2010). The correlations range from 0.42 to 0.78 at the $p < 0.05$ level, which suggests that the possible relationships of the variables in the conceptual model could be tested. Thus, there are no substantial multicollinearity problems encountered in this study.

Table 2: Descriptive Statistics and Correlation Matrix

Variables	MA	SA	LC	BP
Mean	4.02	4.02	4.40	4.51
s.d.	0.50	0.56	0.48	0.61
MA				
SA	0.76***			
LC	0.52***	0.53***		
BP	0.77***	0.70***	0.42***	

*** $p < .01$

Table 3 presents the results of path coefficients and hypotheses testing of the direct and mediating relationships among market environment accounting, learning capability and business performance. Figure 2 shows a summary of the market environment accounting-business performance relationships. Indeed, market environment accounting plays a key role in determining both sustainable competitive advantage and business performance. It significantly and positively affects sustainable competitive advantage ($b = 0.60, p < 0.01$) and business performance ($b = 0.42, p < 0.03$). In existing literature, market environment accounting involves providing information about a firm’s competitive circumstances and market possibilities to respond and satisfy markets’ needs, wants, wishes, and expectations (Ngo, 2021). It helps to understand particular general market forces other than customers and competitors, including government regulations and changing conditions of industry-wide, technology and environmental factors. Firms with great market environment accounting can successfully respond to markets’ conditions and situations and provide great operational strategies and techniques in order to handle these market environments and achieve business success (Nguern, 2018). Better market environment accounting knowledge and understanding can enhance firms to gain competitive advantage and achieve business in a sustainable long-term aspect. Accordingly, they can achieve their sustainable competitive advantage and gain their outstanding business performance. Thus, market environment accounting has a significant effect on both sustainable competitive advantage and business performance. *Therefore, Hypotheses 1a-1b are supported.*

Table 3: Results of Path Coefficients and Hypotheses Testing

Hypotheses	Relationships	Coefficients	t-value	Results
H1a	MA → SA	0.60***	4.53	Supported
H1b	MA → EP	0.42**	2.28	Supported
H2	SA → EP	0.58**	2.41	Supported
H3	MA → SA → EP	0.59***	3.47	Supported

p<.05, *p<.01, CFI = 0.91; GFI = 0.93; IFI = 0.94; RMSEA = 0.05

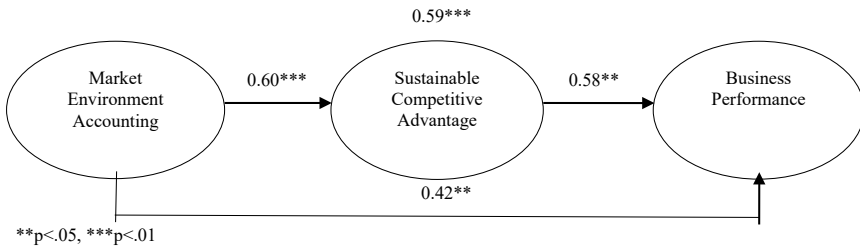


Figure 2: A Summary of the Market Environment Accounting-Business Performance Relationships

Interestingly, sustainable competitive advantage is an important factor that affects business performance. It has a significant effect on business performance ($b = 0.58, p < 0.02$). According to Quaye and Mensah (2019), sustainable competitive advantage is a long-term benefit resulting from unique value creation processes asynchronously with potential competitors that cannot be easily copied. It leads to an implementation of strategies that affects firms’ environmental activities which help them achieve business performance in a competitive market (Arsawan et al., 2022). Firms with sustainable competitive advantage can gain deeper insights into customer needs, wants and trends. They can explore new business opportunities and obtain outstanding business success. They can provide superior customer value and achieve relative lower cost for a long period of time and create superior performance. They also have the possibilities to maintain a competitive advantage rather than merely achieving it at one particular moment (Lichtenthaler, 2022). They tend to outperform their rivals in winning the fast-changing marketplace through achieving a continual competitive advantage that is irreplaceable with their rivals. Accordingly, sustainable competitive advantage positively affects business performance. *Therefore, Hypothesis 2 is supported.* In addition, market environment accounting is a key driver of sustainable competitive advantage whereas sustainable competitive advantage is an important determinant of business performance. It is a go-between for market environment accounting and business performance. It also plays a critical role of a ‘middle-man’ that affects the market environment accounting-business performance relationships. *Therefore, Hypothesis 3 is supported.*

Table 4 presents the results of multiple regression analysis and hypotheses testing of the moderating effects of the research relationships.

Learning capability is an ability of firms to create an enabling platform to generate, acquire, transfer, and integrate knowledge to modify their behaviors for improving performance (Freixanet & Federo, 2022). It focuses on their proficiency at deriving knowledge from past strategic actions and subsequently leveraging that knowledge to adjust their strategies. Firms with great learning capability can provide the abilities to increase, renew and exploit their knowledge base to respond to environmental changes and reduce uncertainty faster than their competitors. It enhances competitive advantage through identifying changing market trends and satisfying customer needs better than their competitors. Similarly, learning capability is also an ability of firms to learn from internal and external sources, improve existing knowledge, develop innovative knowledge, and adjust and modify their behaviors to reflect new cognition situations, with a view to improving their performance (Dhir & Dhir, 2018). It can help identify new opportunities and simultaneously sustain competitive advantage that link to their superior and outstanding business performance. Accordingly, learning capability tends to be a moderator of the relationships among market environment accounting, sustainable competitive advantage and business performance. Surprisingly, learning capability does not moderate the market environment accounting-sustainable competitive advantage relationships ($b = 0.03, p < 0.76$), the market environment accounting-business performance relationships ($b = -0.12, p < 0.27$) and the sustainable competitive advantage-business performance relationships ($b = 0.03, p < 0.77$). However, firms with great learning capability may have problems pertaining to knowledge and information overload resulting from competitive markets and environments, and successes and failures of competitive strategies and techniques. Accordingly, over learning capability may reflect a great deal of worry and concern about competitive situations. It may put pressure on firms and they may make wrong decisions and postpone necessary decisions into a future operation. Thus, learning capability may not strengthen and moderate the aforementioned research relationships. *Therefore, Hypotheses 4a-4c are not supported.*

Table 4: Results of Multiple Regression Analysis and Hypotheses Testing^a

Independent Variables	Dependent Variables		
	SA	BP	BP
MA	0.55*** (0.11)	0.68*** (0.11)	
SA			0.63*** (0.12)
LC	0.23** (0.11)	0.12 (0.11)	0.09 (0.12)
MA*LC	0.03 (0.12)	-0.12 (0.12)	
SA*LC			0.03 (0.13)
OA	-0.07 (0.14)	0.02 (0.15)	0.01 (0.15)
NE	-0.09 (0.09)	-0.14 (0.10)	-0.09 (0.10)
AI	0.15 (0.09)	0.14 (0.10)	0.03 (0.10)
Adjusted R ²	0.51	0.48	0.43

p<.05, *p<.01, ^aBeta coefficients with standard errors in parenthesis.

CONTRIBUTIONS AND DIRECTIONS FOR FUTURE RESEARCH

Theoretical Contribution and Directions for Future Research

In this study, the knowledge-based view of firms is a useful theory which can be used to verify and confirm the positive effects of market environment accounting on business performance. Market environment accounting is an important knowledge about managing costs and benefits of political and regulatory, economic, competitive, technological, and social and cultural factors that affect the firms’ operations, practices and activities. It is a key resource and capability of firms’ sustainable competitive advantage and business performance. It can help create sustainable competitiveness and competitive advantage and achieve long-term performance and success. Better market environment accounting means greater sustained competitive advantage and outstanding performance in a long-term aspect. Accordingly, more knowledge of market environment accounting becomes a valuable

strategic tool in helping succeed, grow, survive, and sustain in the rigorous and turbulent competitive markets and environments. To extend the current research relationships, future research may need to search for dimensions of market environment accounting and test their effects on business outcomes. Next, future research may need to find various mediators, such as customer response efficiency, competitor interception effectiveness and market motivation excellence to expand the benefits of the current research relationships. In addition, future research may need to identify possible antecedents of successfully implementing market environment accounting for enhancing complete research relationship model. Moreover, this study shows that learning capability is not a moderator of the research relationships. Future research may need to reconceptualize the roles and effects of learning capability in the research relationships and search for other valuable moderators, such as digital culture, transformational leadership, business proactiveness, and forward-looking strategy to increase contributions, advantages and implications of the current research relationships. Finally, this study collected data from only cosmetics businesses in Thailand. These cosmetics businesses may be a limitation of the study. A generalizability of the study is not considerably accepted. To expand the current research relationships, future research may classify cosmetics businesses in Thailand into skin cares and health cares. A comparative study of these skin cares and health cares are appropriately investigated. It may also need to collect data from a larger sample or a different sample in order to establish generalizability of the study. This may also include collecting data from at least two sample groups, including different businesses or industries in Thailand and another type of business or industry in Thailand or in other countries to establish the generalizability of the study.

Managerial Contribution

Market environment accounting plays a significant role in explaining and determining sustainable competitive advantage and business performance. It significantly and positively affects sustainable competitive advantage and outstanding long-term business performance. Firms with successfully implementing market environment accounting can provide excellent organizational strategies and techniques, create potential competitiveness and sustainable competitive advantage and achieve outstanding performance and long-term success. To succeed, firms must invest their resources,

assets, tools and technologies through allocating full budgets each year to continuously support the development and improvement of the concepts of market environment accounting and its qualifications, characteristics and utilization. In addition, firms need to encourage their employees to truly understand and implement the concepts of market environment accounting in an organization. Effective implementation of market environment accounting can help develop and improve better potential strategies and techniques, provide greater excellent operations, practices and activities, achieve more sustainable competitive advantage and competitiveness, and accomplish superior business success, survival and sustainability in a long-term aspect. For the applicability to practitioners and policymakers, accountants can apply the concepts of market environment accounting for firms' business activities and operations in order to assist marketers and business policymakers to identify and determine best competitive strategies for gaining and achieving sustainable competitive advantage and long-term performance and success. In summary, firms need to utilize market environment accounting as a significant valuable resource and capability in an organization in order to create sustainable organizational competitiveness and achieve outstanding organizational success and sustainability in long-term and future aspects.

CONCLUSION

Market environment accounting is the concept of market and accounting synergy in an organization. It has become a significant resource which can be used to help firms achieve sustainable competitive advantage and business performance. This study attempts to examine the effects of market environment accounting on sustainable competitive advantage and business performance of cosmetics businesses in Thailand via the moderator of learning capability. Sustainable competitive advantage is also proposed to be the mediator of the research relationships. 391 cosmetics businesses in Thailand are the samples of the study. Structural equation model is applied to test the direct and mediating effects. Multiple regression analysis is also utilized to investigate the moderating effects of the research relationships. The results show that market environment accounting has a significant positive effect on both sustainable competitive advantage and business performance. In addition, sustainable competitive advantage has a

significant effect on business performance. It critically mediates the market environment accounting-business performance relationships. Next, learning capability does not play any role in explaining the research relationships. It is not a moderator of the research effects. In summary, market environment accounting is both a valuable resource and capability in an organization. It could help firms to create sustainable organizational competitiveness and achieve outstanding organizational success and sustainability in long-term and future aspects. To expand the current study, future research may need to search for other dimensions of market environment accounting, test their effects, find various mediators in order to add the benefits of the research relationships. Future research may also identify possible antecedents of successfully implementing market environment accounting, reconceptualize the roles and effects of learning capability in these relationships, search for other valuable moderators in order to increase contributions of these relationships, and collect data from a larger sample, a different sample and at least two sample groups.

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APPENDIX

Appendix A: Measurement of All Variables

Items
<i>Market environment accounting</i>
MA1: We provide information about our competitive circumstances and market possibilities to respond to and satisfy markets' needs, wants, wishes, and expectations.
MA2: We focus on an understanding of particular general market forces than customers and competitors.
MA3: We attempt to respond well to markets' conditions and situations and provide great operational strategies and techniques in order to handle market environments.
MA4: We build a mechanism for creating and developing an understanding of competitive conditions and situations and establishing a repository of competitive information that is a way which this information is enveloped in a process of organizational planning and decision.
MA5: We provide an insight into changes in competitive positioning and organizational by focusing on informality in competitive market analysis and the involvement in which information for decision is fashioned by our markets and environments.
MA6: We analyze and assess business competitions and situations and utilize them for creating, promoting and enhancing value for competitions.
MA7: We have an awareness that employment of technological attributes helps enhance organizational success and sustainability.
MA8: We react to our operating environments by considering an understanding and a creating of business opportunities, benefits and advantages.
MA9: We determine a positive direction relating to market conditions and adapting the businesses according to observed changes.
MA10: We consider a key ingredient of effective reaction in order to build capable competitive actions with effective information gathering and fast reactions to demands a full allocation of effort.
<i>Sustainable competitive advantage</i>
SA1: We achieve a long-term benefit resulting from unique value creation processes asynchronously with potential competitors that cannot be easily copied.
SA2: We provide a role of leadership and an effectiveness of implementing strategies that affect our environmental activities in order to achieve business performance in a competitive market.
SA3: We have unique and valuable strategies that show that in order to gain deeper insights into customer needs, wants and trends, explore new business opportunities and enhance outstanding business performance and success potential and dynamic rivals cannot be imitable.
SA4: We gain superior customer value and achieve relative lower cost for a long period of time and create superior performance.
SA5: We possibly maintain a competitive advantage rather than merely achieve it at one particular moment.
SA6: We have an ability to outperform our rivals in winning the fast-changing marketplace through achieving a continual competitive advantage that is irreplaceable with them.
SA7: We make full use of existing business opportunities for organizations capital while exploiting other resources to guarantee sustainability and replicability of our competition position for the future.

Learning capability

LC1: We have an ability to create an enabling platform to generate, acquire, transfer, and integrate knowledge to modify our behaviors for improving performance.

LC2: We continuously provide our proficiency at deriving knowledge from past strategic actions and subsequently leveraging that knowledge to adjust our strategies.

LC3: We are able to revisit, recreate and execute the revised strategies through learning at each level of an organization as a response to changing environments.

LC4: We can focus, align, execute, and renew our strategies according to the latest trends to remain competitive.

LC5: We provide the abilities to increase, renew and exploit our knowledge base to react to environmental changes and reduce uncertainty faster than our competitors and enhance our competitive advantage.

LC6: We have a capability to learn from internal and external sources, improve existing knowledge, develop innovative knowledge, and modify our behaviors to reflect new cognition situations, with a view to improving our performance.

LC7: We can process knowledge and modify our behaviors to reflect the new cognitive situation.

LC8: We can adapt it to identify the changing market trends and can satisfy customer needs better than our competitors.

LC9: We can identify new opportunities and simultaneously gain and sustain competitive advantage that link to our superior and outstanding business performance.

LC10: We present our features and management qualities directed toward a promotion and support of improving productivity, sensing market opportunities, adjusting business activities, minimizing cost, and new product delivery methods to the market.

Business performance

BP1: We can always achieve the desirable objectives, goals, targets, and outcomes of overall profitability in doing business over a long period of time.

BP2: We clearly obtain increased rate of outstanding profit margin when compared to our major potential competitors.

BP3: We continuously create a number of new customers and gain increased market share continuity when compared to the operations in past years.

BP4: We critically create the reliability and acceptance of new products and certainly increase the expansion and growth of new sales from new and existing customers and return on invested capital.

BP5: We have increased our sales, profits and profitability from successfully doing business in a marketplace.

BP6: We get acceptance from new and existing customers according to our efficiency, effectiveness, productivity, excellence, and success in developing product creativity and innovation.

BP7: We always receive customer satisfaction, gratification, fulfillment, loyalty, and equity from our best business activities and practices.

BP8: We have a confidence that we can continuously gain an economy and effectiveness of resource and asset utilization and achieve return on assets better than our potential competitors.

BP9: We have a confidence that our executives have always satisfied with our performance, success, growth, survival, and sustainability in competitive markets and environments.
