The Factors Affecting the Business Model

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ABSTRACT

Digital technology is the key to affects economic and social development in all sectors. Organizations must recognize the importance of changing the existing business model by reforming with digital innovation. Therefore, the business model in the digital context is a tool to create new products and innovations and new service. This research aims to study various factors with a conceptual framework that cover important parts of the business consist of value propositions, stakeholders, channels, customer relationships, key resources, key activities, key partnerships, cost structure, revenue streams, and sustainability. The researcher used the survey method to distribute the questionnaire to the target group who experts in new product development and innovation by surveying public and private organizations in Thailand. The researcher used the method of analyzing the level of opinion, the Five-Point Likert Scale. Additionally, this research used descriptive statistic and multiple regression for analyzing the data which the significance level of 0.05 by using SPSS Version 24. The results of the study, hypothesis testing has revealed significant factors which have a positive effect. The result from the study, researchers found that key partnerships are the most affecting the business model followed by sustainability, stakeholders and revenue streams respectively.

Keywords : Digital Technology / Digital Innovation / New Product Development / Business Model

1. INTRODUCTION

According to, the digital development plans for economy and society (Ministry of Information and Communication Technology, 2016) Thailand needs to develop infrastructure, innovation, human capital information, and resources to drive economic development by using digital technology. This drive will lead the country to stability, prosperity, and sustainability. In the case of the world's largest online streaming service provider, "Netflix", which has a worldwide membership increase of 137.1 million people (Netflix, 2018), the path to start a business from 20 years ago is just a rental business of entertainment media, DVD via online system, then the business would be replaced by digital technology. Thus, the resulting of changing of the business model by providing video streaming service that accepts customers as a member system (Subscription fees). Business can be expanded quickly. The business model is important to increase the value of E-commerce. In Thailand, the value of e-commerce business has a growth rate of 14.04%, showing the value from 2015 until 2017. Therefore, the value of E-commerce in 2018 is 3,150,233 million baht.

In addition, to study the digital model of The Acceptance and Effectiveness of Interactive Online Learning in Virtual Face-to-Face Learning Technology to be published in International Journal of Innovation and Learning which this research study influential factors affecting the acceptance of Interactive Online Learning in Virtual Face-to-Face Learning technology of high school students in Nonformal Education, in Thailand. The research methodology was applied by experimental research design, CIPPA model and questionnaires. The study conceptual framework based on the Unified Theory of Acceptance and Use of Technology (UTAUT). The data is student performance of mathematic learning through Interactive Online Learning in Virtual Face-to-Face Learning technology, One to Many platforms. The results of this research show the factors that influence acceptance of Interactive Online Learning in Virtual Face-to-Face Learning technology which have the positive relationship in the same direction to the technology adoption. The data obtained from the analysis can be used for planning and developing Interactive Online Learning in Virtual Face-to-Face Learning technology to meet the needs of students and teachers, and to help them gain more knowledge and understanding towards using Interactive

Online Learning in Virtual Face-to-Face Learning technology more increasingly. Also, it can be served as a guideline for related researches, accomplishing the academic results in mathematics and other subjects in the future. For the theoretical practice, it leads to the new theory called the Modified UTAUT. The results based on this theory shows that all factors accept the hypotheses at the significance level of 0.05, where R squared of Y1 = 0.702 and R squared of Y2 = 0.602, showing the coverage of this research. This new theory is consistent with the academic results from the greater post-test score after study using Interactive Online Learning in Virtual Face-to-Face technology than the pre-test one. (Achara Suksakorn, Arnon Tubtiang)

From such information, leading to the study of factors that affecting the business model in the opinion of experts in new product development and innovation by exploring both public and private organizations in Thailand. To be a guideline for the development of the organization to run the business efficiently and increase competitiveness.

2. MATERIALS AND METHODS

2.1 CONCEPT OF BUSINESS MODEL (BM)

Business model is the business plan of the organization that will make the organization generate profits by using digital technology as a tool to create new products and innovations, new service or new experience.

Osterwalder (2009) explained that business model canvas is a business planning tool. The Business Model Canvas describes the reasons for creating an organization, delivery value propositions to answer 4 business topics: What (What to do?) Who (Who do it for?) How (How to do?) Money (Does it worth?). To give the organization an overview of business in all dimensions and running the business to success. There are 9 main components of business assessment that cover the important part of the business are value propositions, customer segment, channels, customer relationships, key resources, key activities, key partnerships, cost structure, and revenue streams.

Tapscott (1995) explained that the new business model is caused by social networking. In which each sector has joined together to work together, sharing ideas and knowledge in order to create value. The changing of the structure of the organization will have occurred the changing in product and service, new production and new collaboration. The main factor of the transition to the New Business Model is innovation from knowledge. To develop products and services, create innovation to meet the needs of customers that are constantly changing.

Elkington (1997) explained that measuring the goals of business success and the value of that organization does not depend on the measure only the profit. The concept of John Elkington emphasizes the importance of looking at the value and evaluating the success of the organization with all three elements: economic, social and environmental aspects. Including business operations with transparency and corporate governance in order to contribute to the success of sustainable development. A concept that extends the measurement of goals, achievements and organizational values in 3 dimensions as follows.

1) People; The business operation should ensure fairness to surrounding communities and including stakeholders. Regarding equality should not hurt, force, threat and not using child labor or do anything that is against the ethics by having to conduct business with fairness and democratic management.

2) Planet; The business operation focuses on the environment. To be sustainable which requires the least impact resources, renewable energy, reducing toxic substances, not releasing waste to the environment and use the recycling policy to preserve the environment as much as possible.

3) Profit; The business operation must generate profits but profit in this sense means economic profit that deducts both cost of visible and invisible which should be benefited from social and environmental costs of business operation.

2.2 THEORY

2.2.1 Framework for business model innovation.

Mahadevan (2002) explained that innovation is an important tool for creating value and strategic competitive advantage. For the purpose of this research, developing a framework for business model innovation will have an important role in the process which business model innovation will show that the company is able to strategically position the product, technology, process, and marketing by creating value and competitive advantage. The important components of business model innovation are target customer, value proposition and value delivery system which are the framework of business model innovation. The important duty of a company that should achieve sustainability. Therefore, this research reveals an operational framework for business model innovation.

2.2.2 Business model innovation, when the game gets difficult, change the game.

Lindgardt, et al., (2009) explained that the combination of product innovation and business model innovation has been achieved with a greater market share. In the case of Apple, the product success has been the center of the market that is 30 times larger than the general, but the lifestyle of the business model is shortened due to new competitor entrance, migration of production lines to countries with lower costs, business connectivity, creating limitations and accelerating the process of creating new innovations. Competitive advantages create a business model that consists of 2 important issues are the value proposition and the operating model. Therefore, innovation has become a business model innovation when 2 elements of a business model are valuable and deliver new values.

2.2.3 New Business Models for a New Global Landscape.

Bhattacharya, et al. (2017) explained that companies are going to change the way to compete in the new world, so there are 7 predicted business models: Cross-border servitization, asset-light market entry, adding value through software, global digital ecosystems, global personalization, multilocal manufacturing and developing multiple national identities. The 7 global business models have been developed to further create 6 new business models: connectivity, data analytics, and artificial intelligence, digital platforms, industry 4.0, protectionism, state capitalism and connected, and Mobile Consumer.

2.2.4 New Business Model Concept.

Tapscott (1995) explains that the new business model is caused by social networking. In which each sector has joined together to work together, sharing ideas and knowledge in order to create value. The changing of the structure of the organization will have occurred the changing in product and service, new production and new collaboration. The main factor of the transition to the New Business Model is innovation from knowledge. To develop products and services, create innovation to meet the needs of customers that are constantly changing. There are a new production model and a new collaboration called "Social Innovation" or "Social Productivity" by having 7 simulated business model are the peer pioneers, ideagoras, prosumers, the new alexandrians, platform for participation, the global plant floor and the wiki workplace. The 7 of business model concepts are going to be a new business model. The innovation is the key that comes from knowledge to improve and develop products and services, create innovation to meet the needs of customers that are constantly changing.

2.2.5 New Economic Concepts, New Organizations, New Technologies and 12 Major Factors of the Organization, the Digital Economy.

Tapscott (1995) explained that the new economy is to change business capabilities in various fields for going to the competition in the future. The changing of the economy from the old era to the new era should consist of the new economy, new organization and new technology which the 3 dimensions must be connected strongly. All sectors must have cooperation also include external personnel and customers. When all sectors understand the impact of technology, the organization is ready to change.

2.2.6 Research on Overview of business innovations and research opportunities in blockchain and the introduction to the special issue.

Zhao, et al. (2016) explained that Blockchain is an internet connection in a new business model which has the basis of work processes that help to solve problems of trust to be more effective. Blockchain receives interest from business sectors such as banks, governments, and business organizations. At present, Blockchain's work is in the business of bitcoin trading in digital currency. Blockchain is the tool behind the success by using a public key and private Key. The main concept of Blockchain is distribution. Therefore, various transactions on Blockchain will be recorded and verified by the participants. The recorded data will be stored as a block and connected together like a chain. Making it impossible to edit any information. Therefore, security performance in the Blockchain system is the most important thing. Thus, Blockchain is recognized as a new way to manage the needs of individual organization and technology.

2.2.7 Business Model Canvas.

Osterwalder (2009) explained that the business model is a planning and development tool by using the Business model canvas which has been described as creating an organization and determining the value (Value Propositions) to answer the 4 questions of business topics that consists of what, who, how and money. The organization can see the business in every dimension and part by evaluating 9 parts of the business are Value Propositions, Customer Segment, Channels, Customer Relationships, Key Resources, Key Activities, Key Partnerships, Cost Structure, and Revenue Streams

2.2.8 Lean Canvas.

Maury (2010) explained that the Lean canvas is a new design tool with a concise writing style and communication for people to collaborate more easily. Lean canvas has been modified from the Business model canvas. It is designed to be suitable for an entrepreneur.

2.2.9 The Triple Bottom Line.

Elkington (1997) explained that measuring the goals of business success and the value of that organization does not depend on the measure only the profit. The concept of John Elkington emphasizes the importance of looking at the value and evaluating the success of the organization with all three elements: economic, social and environmental aspects. Including business operations with transparency and corporate governance in order to contribute to the success of sustainable development. A concept that extends the measurement of goals, achievements and organizational values in 3 dimensions are people, planet and profit.

2.3 RESEARCH MODEL

This research is quantitative research which uses questionnaires as a research tool for collecting data in this study. The interested groups are expert in new product development and innovation by surveying public and private organizations in Thailand. The confidence level was determined 95% and reliability of the question the Cronbach's Alpha Coefficient more than 0.7.

2.4 FACTOR AFFECTING THE BUSINESS MODEL

The researcher collected relevant literature and studied the research to find factors. The researcher uses the key concepts of Business Model Canvas (Osterwalder, 2009), The Digital Economy (Tapscott, 1995) and The Triple Bottom Line (Elkington, 1977) to study the factors that affecting the business model as follows.

2.4.1 Value Proposition Factor means the selling point of products or services delivered to customers which to create a customer satisfaction and competitive advantage. Applying the assets of the organization to the maximum benefit and revenue.

2.4.2 Stakeholder Factor means those who are involved. That are affected by the business operation such as the customers, suppliers, and employees of the organization who should cooperate and work together efficiently.

Table 1 *Summary of Independent Parameters.*

Factors	Mahadevan (2002)	Lindgardt, et al. (2009)	Bhattacharya, et al. (2017)	Tapscott (1995)	Tapscott (1995)	Zhao, et al. (2016)	Osterwalder (2009)	Maury (2010)	(1997)	This Research
Value Propositions	✓	✓	✓	✓	✓	✓	✓	✓		✓
Stakeholders	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Channels	✓	✓	✓	✓		✓	✓	✓		✓
Customer Relationships							✓			✓
Key Resources			✓	✓	✓	✓	✓		✓	✓
Key Activities		✓	✓	✓	✓	✓	✓			✓
Key Partnerships			✓	✓			✓			✓
Cost Structure		✓	✓				✓	✓	✓	✓
Revenue Streams		✓	✓	✓		✓	✓	✓		✓
Sustainability	✓								✓	✓

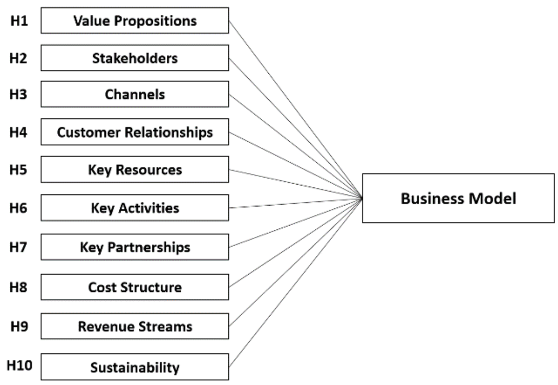

Fig. *1 Business Model*

2.4.3 Channels Factor means communication channels such as offline distribution channels which can make a good impression by creating a good relationships with customer at storefront, online distribution is available all the time conveniently such as e-commerce, offline and online (OMNI Channel) distribution are communicate with a variety of channels by linking both ways which can be made the customer more convenient to access.

2.4.4 Customer Relationships Factor means building relationships with customers by offering products or services that enable customers facilitate and customer satisfaction. The relationships can retain existing customers and build more relationships with them by presenting value of products or services. The customers can aware and remember in our brand excellent service.

2.4.5 Key Resources Factor means the key resources in the company. In order to manage the resources available to maximize benefits. Physical resources such as buildings, tools, and raw materials are the main basic resources for conducting business. Intellectual resources are the result of the invention human to creates competitive advantage by working skills, experiences and knowledge. Financial resources are things that support all resources by funding to extend the purchase of more resources and expand the growth towards business operations.

2.4.6 Key Activities Factor means the main activities in the company which also includes procedures, rules, regulations, working process to the desired organization. It must clearly specify the scope from the first operation process to the end of process. Rules and regulations which consists of repeatable steps and operational framework. The organization is a part of the organizational structure because the process will not occur without the organizational structure to support and the main activities of the organization must have characteristics that cross the line of work (Cross-functionality) to communicate and coordinate for maximum efficiency.

2.4.7 Key Partnerships Factor means business partners that are cooperating. Building relationships to develop new business and drive business to grow together by creating strategic partners and collaborating with many parties such as coopetition between competitors to creates strategically and coopetition between buyers and suppliers.

2.4.8 Cost Structure Factor means the costs of a company which used in its business operations, such as fixed costs, variable costs, cost-effective economies of scale and cost savings from the scope by controlling both fixed costs and variable costs, the production of many economies of scale will result in a decrease in average costs, so the organization must consider using of costs. It worth more economies of scope by reducing the total cost resulting from two or more agencies using the combined resources and help the organization benefit in cost savings.

2.4.9 Revenue Streams Factor means revenue generation in business operations by continuously developing products or services from asset, from usage fees which arising from services, from subscription fees which make users feel connected with brand loyalty, from lending / renting / leasing system forms which the benefit of assets, and from licensing which is products or services of intellectual property.

2.4.10 Sustainability Factor means the business to be successful and sustainable which must take into account people, profit and planet that do not affect in 3 areas. People are employees, partners, customers and also include the community. Profit is benefits of conducting business which the goal is not only to maximize profit but also consider social and environmental. Planet is environment around the world where conducting the business in the world must consider a sustainable brand by having social responsibility to according with the changing environment.

2.5 RESEARCH HYPOTHESES

According to the framework concept, this study has 10 hypotheses as follows: -

H1: Value Propositions expectancy the Business Model,
H2: Stakeholders expectancy the Business Model,
H3: Channels expectancy the Business Model,

H4: Customer Relationships expectancy the Business Model,
H5: Key Resources expectancy the Business Model,
H6: Key Activities expectancy the Business Model,
H7: Key Partnerships expectancy the Business Model,
H8: Cost Structure expectancy the Business Model,
H9: Revenue Streams expectancy the Business Model,
H10: Sustainability expectancy the Business Model,

3. RESULTS AND DISCUSSION

This research is quantitative research which uses questionnaires as a research tool for collecting data in this study. The interested groups are expert in new product development and innovation by surveying public and private organizations in Thailand. The questionnaire has been distributed to a group of 242 persons who were expert in new product development and innovation. The responses were back from 133 persons. The confidence level was determined 95% and reliability of the question the Cronbach's Alpha Coefficient more than 0.7 which tested the questionnaire before distributing to an interested group as illustrated in Table 2. The questionnaire was separated into 3 parts. Part 1 is a general questionnaire for respondents. Part 2 is a questionnaire about the business model which there was a filter that respondents are experts in new product development and innovation. The results analysis of opinions was used by 5-level of Likert Scale. The questionnaire was a questionnaire about all 11 factors that affect the business model 40 items. Part 3 was an open-ended questionnaire by allowing respondents to freely express additional opinions.

Table 2 *Summary of Reliability Analysis*

Variables	Cronbach's Alpha	N of Items
Value Propositions	0.738	3
Stakeholders	0.763	3
Channels	0.823	3
Customer Relationships	0.759	3
Key Resources	0.761	4
Key Activities	0.795	4
Key Partnerships	0.763	4
Cost Structure	0.779	3
Revenue Streams	0.813	5
Sustainability	0.890	4
Business Model	0.865	4
All Variables	0.863	40

The analysis of the descriptive data of the respondents is the analysis of information about the characteristics of personal data and shows the results of the analysis by the variables in the study. The researcher distributed a questionnaire to collect data from the interested group by surveying government and private organizations in Thailand. The respondents from 133 persons were males (53.4%), age of 31-40 years (52.6%), master's degree (46.6%), years' experience of 1-10 years (43.6%), employee (29.3%), private organization (73.7%), service sectors (30.8%) and salary 50,001 baht up to (33.8%).

Table 3 *Result of R Square Model Summary*

R	R Square	Adjusted R Square	Std. Error of the Estimate
.752[a]	.566	.531	.40264

Table 3 shows multiple coefficient of determination or R Square is equal to .566 or 56.6% that all the 10 independent variables were affected the business model.

Table 4 *ANOVA Test Result ANOVA*

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	25.819	10	2.582	15.926	.000[b]
Residual	19.778	122	.162		
Total	45.598	132			

Table 4 ANOVA test shows the regression coefficients of all 10 variables are independent because of Sig being equal to 0.000.

Standardized Coefficients in Table 5show the standard coefficients that Key Partnerships factor affecting the Business Model with the highest important at the Beta value of 0.273. The second most impact factor is Sustainability with the Beta value of 0.256. Then, No.3 is Stakeholders with the Beta value of 0.198 and lastly, the Revenue Streams is the least impact with the Beta value of 0.197.

From the study of factors that affect the Business Model, it was found that the factors of value propositions, channels, customer relationships, key resources, key activities, and cost structure have refused hypotheses 1, 3, 4, 5, 6 and 8. These factors are the basis of business structure operations that all organizations operate. Therefore, they do not affect the business model but the factors of stakeholders, key partners, revenue streams and sustainability have confirmed hypothesis 2, 7, 9, and 10. These factors are the business structure operations of the organization which should be focused on the importance of appropriate factors. Therefore, affecting the business model as follows.

Table 5 *Result of Multiple Regression Analysis Coefficients*

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.048	.372		.130	.897
Value Propositions	.038	.094	.035	.402	.688
Stakeholders	.217	.097	.198	2.234	.027
Channels	.054	.077	.058	.697	.487
Customer Relationships	-.072	.085	-.079	-.837	.404
Key Resources	-.076	.088	-.075	-.858	.393
Key Activities	.088	.084	.085	1.045	.298
Key Partnerships	.300	.092	.273	3.255	.001
Cost Structure	-.019	.085	-.019	-.227	.821
Revenue Streams	.207	.102	.197	2.042	.043
Sustainability	.250	.093	.256	2.695	.008

Table 5 Coefficients show the test result of each variables. Stakeholders, Key Partnerships, Revenue Streams and Sustainability are the sig. because they are less than 0.05., and positive correlation with the business model Thus that means the confirmation of hypotheses of H2, H7, H9 and H10 as show in Table 6 below.

1) Value Propositions do not affect the Business Model which response in creating the competitive capability for the organization and customers, including making the organization more income.

2) Stakeholders affecting the Business Model which the name of the factor is modified from the customer segment of Alexander Osterwalder with the Business Model Canvas concept and Don Tapscott's perspective with the concept of The Digital Economy. The Business Model should be promoted in all 3 areas: economy, organization, and technology, which requires cooperation in all sectors including customers, employees, suppliers, and stakeholders or those who are involved in both supply chain coordination and collaboration, sharing knowledge for supporting each other develop products or services. That is ready to lead to change effectively and successfully.

Table 6 *Hypotheses Test*

Hypotheses	Explanation	Results
H1	Value Propositions affecting the Business Model	Refused
H2	Stakeholders affecting the Business Model	Confirmed
H3	Channels factor affecting the Business Model	Refused
H4	H4: Customer Relationships affecting the Business Model	Refused
H5	H5: Key Resources affecting the Business Model	Refused
H6	H6: Key Activities affecting the Business Model	Refused
H7	H7: Key Partnerships affecting the Business Model	Confirmed
H8	H8: Cost Structure affecting the Business Model	Refused
H9	H9: Revenue Streams affecting the Business Model	Confirmed
H10	H10: Sustainability affecting the Business Model	Confirmed

The Regression equation shall be formulated as follows:

$$BM = 0.048 + 0.038VP + 0.217SH^{*} + 0.054CN - 0.072CR - 0.076KR + 0.088KA + 0.300KP^{*} - 0.019CS + 0.207RS^{*} + 0.250SA^{*}$$

Where: BM is Business Model,
VP is Value Propositions Factor,
SH is Stakeholders Factor,
CN is Channels Factor,
CR is Customer Relationships Factor,
KR is Key Resources Factor,
KA is Key Activities Factor,
KP is Key Partnerships Factor,
CS is Cost Structure Factor,
RS is Revenue Streams Factor,
SA is Sustainability Factor,

Note: *It has significant affecting on the Business Model at 0.05.

3) Channels do not affect the Business Model show that the access channels, whether Offline channels, online channels and online and offline access channels (OMNI Channel) do not respond to business models.

4) Customer relationships do not affect the Business Model shows that building relationships with customers is not yet responding. Customers may not be satisfied giving importance to the relationship between the presentation of products or services, including giving services in various forms. In the concept of Customer Relationship Management is creating a relationship with the customer which is part of the strategic planning to make customers loyalty, create long-term profits and retention customer. However, if the strategy is not achieved which cannot be practiced and the organization has no understanding of the using technology to apply that will cause more failures than success.

5) Key resources do not affect the Business Model show that the physical resources are a basic resource for business even the resources of the intellect caused by human creativity by using both skills experience and knowledge from humans including financial resources still cannot create competitive advantage and create quality work.

6) Key activities do not affect the Business Model show that the main activities of the organization are just activities that are the basic structure of every organization, such as scope of work, rules, regulations, laws and coordination between organizations.

7) Key partnerships affecting the Business Model show that concept of creating strategic alliances by collaborating with many parties, such as customers, suppliers to drive business to grow, develop, increase competitive capability and joint venture between partners. Building relationships between each other. Therefore, affecting the business model.

8) Cost structure factors do not influence the business model show that the cost structure is fixed costs, variable costs, product production, economies of scale and economies of scope are the basic structure of every organization that must act as a basis. When changing in the era of digital, creating innovations and products resulting from new ideas which are can find money from venture capital.

9) Revenue Streams affecting the Business Model show that the organization should continuously develop products or services by making a difference. Using the digital to create income generation models such as application fee which makes more channels to build good relationships with customers. As a result, customers are committed to the brand. (Brand loyalty) causes the revenue earned by the lending, renting and leasing, resulting in the benefit of lending. Income from intellectual property (Licensing) can create an advantage over competitors in the market which must be added value to products or services with intellectual property in order to generate more revenue.

10) Sustainability affecting the Business Model show the Triple Bottom Line confirms that there are 3 dimensions of measure profits to drive to a business model from building a sustainable brand, social responsibility, and environmental conservation. Business operations that must consider people, such as employees, partners, customers, communities and including the impact on those around them. The target of profitability must consider the benefits of social and environmental costs as well.

4. CONCLUSIONS

This study reveals the factors that affected the Business Model, key partners (0.300) are most encouraged. Secondly, sustainability (0.250) is also recommended. Later, stakeholder (0.217) and revenue streams (0.207) are also considered. From the result, it has formulate equation (BM = 0.048 + 0.038VP + 0.217SH* + 0.054CN - 0.072CR - 0.076KR + 0.088KA + 0.300KP* - 0. 019CS + 0.207RS* + 0.250SA*) for forecast to the Business Model.

The results of the hypothesis analysis by using Multiple Regression Analysis. The multiple coefficient of determination (R Square) is equal to 0.566. This means that all 10 variables coverage the affected of the dependent variable 56.6%.

This study reveals factors that affected the business model, the researchers discovered new factors of the business model. It was the sustainability factor which was added to the study and the stakeholder factor which was a modified factor from the customer segment. This is the new theory of the business model that it can be used in generic and emphasized sustainability. Previously, it emphasized the customer only. The Business Model from the study, therefore, suitable for digital technology and innovation business which is a tool to create product innovation and service.

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