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The Moderating Role of Data Privacy and Protection Security on Service Quality, Brand Equity, and Tariff Towards Firm Performance

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Abstract

Indonesia had more than 200 million cyber-attacks. Due to its poor cybersecurity system, the country is subject to frequent attacks. As an illustration, in one week in January Indonesia experienced 1.35 million website attacks. The most recent major cyber-attacks in Indonesia happened during the 'WannaCry' ransomware attack in May 2017. 12 institutions in Indonesia were attacked, including plantation and manufacturing companies as well as universities. With 355 million telecom subscribers in total as of June 2019 (fourth-largest cellular market in the world) Indonesia still has extremely low awareness of the essentials of data privacy and protection security while few of the major telecom operators that offer prime data privacy and protection are a major distinguishing factor of service quality excellence. The Journal will have as main objective the evaluation of the Data Privacy and Security Protection of mobile telecommunications perceived by the clients towards its brand Equity and firm performance. The relationship and impact between data privacy and protection security as a moderating role with other 5 dependent variables were tested in different periods of telecom professionals

and enthusiasts from different regions. This study applied quantitative analysis with data received from 215 high level telecom professionals from major operators and vendors who had extensive experience and knowledge within the Telecom Industry.

Keywords: Data privacy and protection security, Service Quality, Brand Equity, Firm Performance

I. INTRODUCTION

Cellular security is a growing problem. About 94 percent of customers in mature markets and 90 percent in transition markets are worried about cellular security. Globally, 47 percent of respondents will change operators if they experience a security breach (Nokia Research 2017).

The continuous advancement of registering, interchanges, and capacity advances exhibits a test to security insurance, given the expanding ease with which individual information can be gathered, dissected, put away and shared. PC researchers have created "security by structure" systems, for example, information minimization, which help to implement the information insurance and protection shields contained in national legitimate systems and global human rights instruments. Such procedures give a format to social orders that desire to guarantee the proceeded with insurance of centre social esteems in an undeniable innovation intervened world (Brown, 2014)

In the Indonesian context, the Minister of Communication and Information will speed up the discussion of the Personal Data Protection Bill. For information, the regulation becomes a necessity in the current digital era. This rule is considered important to ensure clarity of complaint mechanisms, if there are suspected leakage and misuse of data, including recovery (www.inet.detik.com, 2019) So far, the regulations concerning protecting personal data are only regulated in Minister of Communication and Information Minister Regulation (Permenkominfo) Number 20 of 2016 concerning Protection of Personal Data in Electronic Systems. Therefore, a bill needs to be made to reinforce these regulations. Reflecting on the countries in Europe, regulations regarding digital advertising whose data are sourced from personal data of social media users, are considered stronger than existing regulations in Indonesia. Thus, the Personal Data Protection Bill is required to keep up the security of individual information of web clients.

II. LITERATURE REVIEW

Research process evaluation of client satisfaction regarding the services of mobile telecommunications. Thus, in this chapter, we will address the concept of Data Privacy and Protection Security, Brand Equity and Firm Performance.

1. Firm Performance

Execution estimation is a subject that is regularly to think about and examined however once in a while characterized. The majority of the firm are looking to improve their exhibition, contending in a ceaselessly changing condition and screen execution. Firm execution is the way toward evaluating activity, where the estimation of the procedure and measurement activity leads to firm execution. The degree of firm execution is a component of the adequacy and productivity of the activities it embraces, so firm execution estimation can be characterized (Neely and Platts, 2005).

2. Data Privacy and Protection Security

Telecommunications regulations in Indonesia will protect consumers in the telecommunications sector, namely the Minister of Communication and Information Regulation (Permenkominfo) Number 20 of 2016 concerning the Protection of Personal Data in Electronic Systems. The most suitable regulatory concept for Indonesia is a combination of regulatory concepts (Rosadi, 2018). This regulatory concept combines several approaches in regulating privacy on personal data due to the rapid growth of information technology, so that the personal information may easily be accessed, processed, compiled and distributed to others.

3.Brand Equity

Research directed by Buzdar, Janjua, and Khurshid (2016) related brand value in the telecom industry, clarify client based brand value in the five significant GSM organizations working in Pakistan. A review technique was utilized and a poll flowed among the clients of GSM, utilized elements of brand value were brand mindfulness, saw quality, brand picture, and brand steadfastness.

4.Service Quality

From the ongoing years, the predominance in the market transformed from the item to administrations, and techniques go to client base and relationship. Conveying quality helps adjusting to reliably satisfy client desires. There are significant contrasts between administration area and buyer merchandise, with qualities of administrations, impalpability, heterogeneity, indivisibility and perishability, which speak to a significant test for suppliers (Polyakova and Mirza, 2015).

5.Government Regulation and Tariff

Structure of World Telecommunication Regulator Body

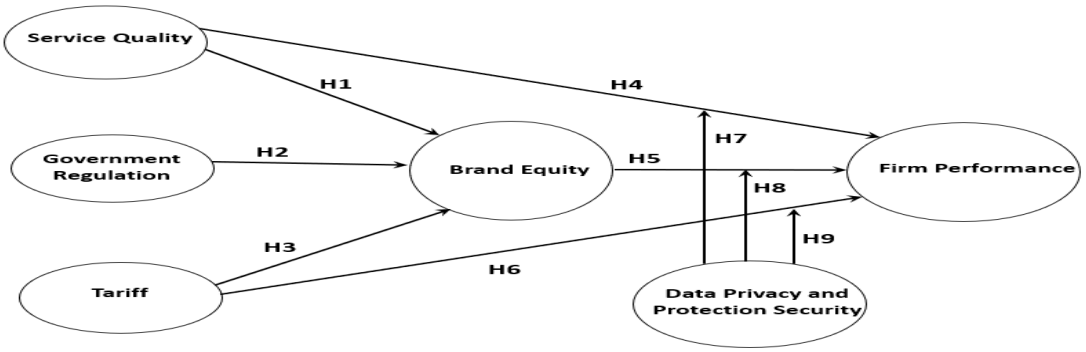
The highest position of the Telecommunications Regulatory Body in the world is ITU (the International Telecommunication Union) which in 1947 was made one of the organs of the United Nations. Indonesia joined the signing of the General Agreement on Trade in Services (GATS), so there must be a requirement for an independent telecommunications regulatory body to be established, then the Ministry of Communication and Information Technology will form a BRTI (Indonesian Telecommunications Regulatory Body). According to Haryadi (2018), there are three key instruments of telecommunications regulation, the first is the regulation of price, theoretically, it can determine certain prices that must be imposed by operators/providers, or maybe limit operators/providers to set prices in several ranges.

III. RESEARCH METHODS

The research methodology that will be used in this thesis presents the models that are used as analysis tools, the assumptions implicit in the research models, the independent and dependent variables to be used, as well as conducting analysis methodology of collecting and processing the data.

Research Framework

Data analysis in this study will use Structural Equation Model (SEM) using tools SmartPLS software version 3



The correlation between ROA and executive compensation is positive and significant at the 5% level. The independent variable leverage level is also negatively correlated with executive compensation. The coefficient correlation varies from -0.3398 (between leverage and ROA) and 0.3076 (between ROA and executive compensation), indicating no multicollinearity problem in our data analysis.

Research Framework

In research conducted there were six variables: Data Privacy and Protection Security, Service Quality, Government Regulation, Tariff, and Firm Performance. The following table is an explanation of the variables and indicators used in the study.

Variables and Indicators

Main Variable	Main Variable Definition	Indicator	Scale
Data Privacy and Protection Security	The ability to access information and services on communication devices with guaranteed information security relating to users (Cussoy, Puspita & Hariyanto, 2013; Klaesson, 2017)	Access without location and time restrictions	Interval
		Service in a short time	
		Ease of access	
		Attention to security	
		Data security on communication devices	
Government Regulation	Regulations issued by the government to develop the telecommunications industry (Haryadi, 2018; Venkatram & Zhu, 2012)	Government regulation	Interval
		Fair competition in the telecommunications sector	
		Telecommunications industry trends	

		Telecommunications operator	
		Access to telecommunications operators	
Tariff	Certain prices that must be imposed by operators, or maybe limit operators to set prices in several ranges (Haryadi, 2018; Venkatram & Zhu, 2012)	Prices are applied according to service quality	Interval
		The services provided are diverse	
		Alternative prices for various operators	
		Affordable service packages	
Brand Equity	a set of association which customer has with the brand (Lee & Leh, 2011)	Brand Awareness among competing brands	Interval
		Owner brand Association	
		Good perceived quality	
		Brand Loyalty	
Service Quality	Customer perceptions of service quality comparison from the result of the customer before service expectation with actual service customer experience (Ghotbabadi, Feiz & Baharun, 2015; Naik, Gantasala & Prabhakar, 2010)	The appearance of physical facilities	Interval
		Perform the promised service	
		Willingness to help customers	
		Improve employee knowledge	
		Attention is given to customers	
Firm Performance	Firm performance is the process of quantifying action, where measurement the process and quantification action lead	Firm market share	Interval
		Firm growth rate	
		Firm profitability	
		Firm innovativeness	

	to firm performance (Neely and Platts, 2005; Taouab and Issor, 2019)		

IV. POPULATION AND SAMPLING METHOD

The population used in this research is mobile phone users of various ages. The inspecting method utilized in this exploration is likelihood examining. The purpose of probability sampling is to represent the characteristics of the population that will be used in the study, to estimate statistical parameters and obtain data for hypothesis testing and decision making, so that conclusions on populations can be justified. The object of research is service quality, government regulation, tariff, brand equity, and firm performance. Research subjects are the user of mobile telecommunication services, in the telecommunication industry.

V. DATA SOURCES AND COLLECTION

According to Sekaran and Bougie (2013), the example is a subset of the people in a populace. Given the above information obtained for a sample can be generalized to the entire assessment of the Quality of Mobile Telecommunications Services population. However, samples do not always reflect the structure of the population from which they were representative of the population and it may lead to biased results. To calculate the sample size was considered that the population was infinite due to its large size, for a precision of 5% and 95% confidence interval or a precision of 10% and 90% confidence interval.

VI. METHOD OF ANALYSIS

To process the data obtained through the questionnaire, calculations will be performed and different statistical techniques used, using SMART-PLS version 3.0 for validity test, reliability test, and multiple regression analysis. Structural Equation Modeling (SEM) is grouped into two approaches, namely the Covariance Based SEM (CB - SEM) approach and the Variance Based SEM or Partial Least Square (PLS). Partial Least Square is a powerful analysis method in which this method is not based on many assumptions (Latan and Ghozali, 2012).

Outer model analysis

Validity Test

Indicator	Outer Loadings	Indicator	Outer Loadings
SQ1	0,762	TR3	0,805
SQ2	0,859	TR4	0,780
SQ3	0,815	DP3	0,680
SQ4	0,717	DP4	0,727
SQ5	0,712	DP5	0,800
GR1	0,805	BE1	0,185
GR2	0,811	BE2	0,658
GR3	0,480	BE3	0,572
GR4	0,107	BE4	0,818
GR5	0,593	BE5	0,843
DP1	0,646	FF1	0,764
DP2	0,686	FF2	0,814
TR1	0,710	FF3	0,695
TR2	0,741	FF4	0,654

Discriminant Validity Test

Variable	AVE
Brand Equity	0,539
Data Privacy	0,547
Firm Performance	0,539
Government Regulation	0,473
Tariff	0,578
Service Quality	0,601

Reliability and Composite Reliability Test

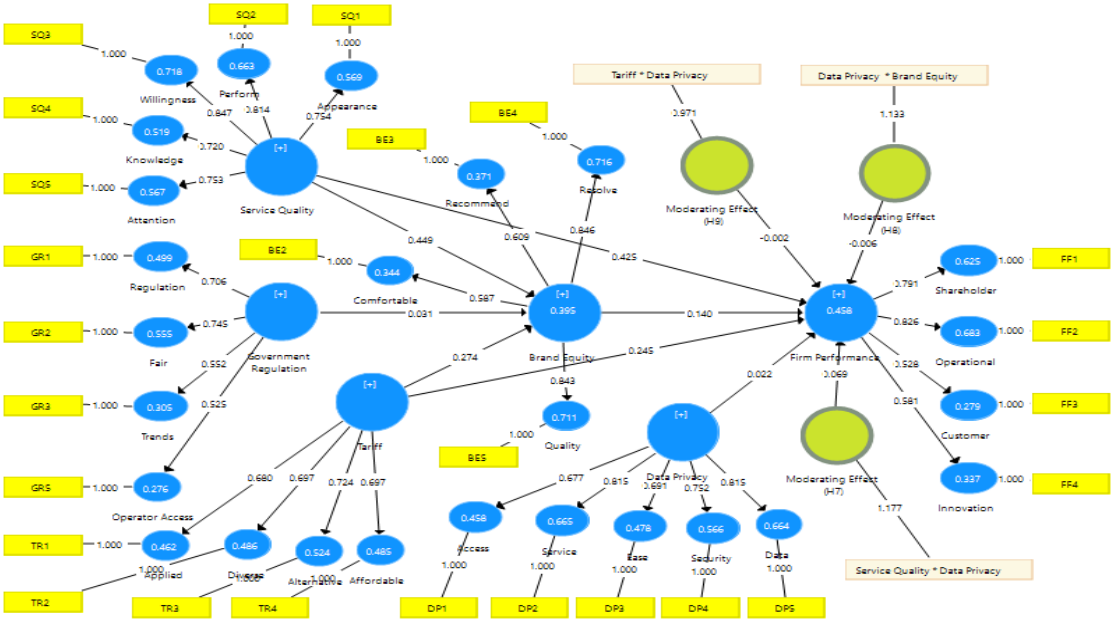
Variable	Cronbach Alpha	Composite Reliability
Brand Equity	0,706	0,820
Data Privacy	0,790	0,857
Firm Performance	0,711	0,823
Government Regulation	0,614	0,775
Tariff	0,755	0,845

Service Quality	0,832	0,882

Based on the results of data processing on the outer model analysis, the indicators and variables used in the study are valid and reliable.

VII. INNER MODEL ANALYSIS

In the inner model analysis, the coefficient of determination (R2), predictive Relevance test (Q2) and discussion for path coefficients and significance tests are carried out in PLS-SEM.



Structural Equation Modelling Analysis

Measurement results of Inner Model

Variable	Firm Performance	Service Quality	Data Privacy	Government Regulation	Brand Equity	Tariff
Communality	0,481	0,535	0,566	0,408	0,607	0,489
R – Square	0,458	0,395				
The goodness of Fit (GOF)	0,468					

Q – Square Predictive Relevance	0,672

Path Coefficients and Significance

Hypotheses	Description	Sign	Path Coefficient	P-Value	Effect and Significance
Hypotheses 1	SQ → BE	+	0.449	0.000	Positive Significance
Hypotheses 2	GR → BE	+	0.031	0.595	Positive Not Significance
Hypotheses 3	TR → BE	+	0.245	0.000	Positive Significance
Hypotheses 4	SQ → FP	+	0.425	0.000	Positive Significance
Hypotheses 5	BE → FP	+	0.140	0.078	Positive Significance
Hypotheses 6	TR → FP	+	0.245	0.000	Positive Significance
Hypotheses 7	SQ → FP → DP	+	0.069	0.335	Positive Significance
Hypotheses 8	BE → FP → DP	-	0,006	0.951	Negative, Not Significance
Hypotheses 9	TR → FP → DP	+	0,042	0.979	Positive, Significance

VIII. CONCLUSION

Based on the data and results given in the previous chapter, the following are the conclusion and recommendation obtained from this study.

Service Quality has a positive and significant effect on Brand Equity, it explains customers who feel good service will tell others so that the information can spread more widely. The dissemination of good information about good service will cause increased customer retention to make the company's brand equity improved.

Government Regulation has a negative and not significant effect on Brand Equity, telecommunications regulation is considered as a barrier to the proper use of resources, development, capabilities, and regulatory structures that have an impact on the economy and security. the regulator changes affected the telecommunications industry, the company face additional expenditure on implementing new regulation

The tariff has a positive and significant effect on Brand Equity, price awareness has been a theme in pricing and the ability of buyers to remember prices. The application of tariffs that are in line with expectations and telecommunications services perceived by customers can increase brand equity owned by the company.

Service Quality has a positive and significant effect on Firm Performance, it explains the importance of improving services provided to customers, satisfied customers will continue to use the services provided by the company, the more telecommunications service users become regular customers, the firm performance becomes better.

Brand Equity has a positive and significant effect on Firm Performance. Telecommunications companies essentially need to have a good brand to support company performance. A good brand must be proven with good service because the end-user will compare the services provided by the company with the services of other companies. The increase in brand equity owned by the company will ultimately have an impact on increasing the company's performance.

The tariff has a positive and significant effect on Firm Performance, increased tariffs can provide better income for the company, with an increase in revenue the company can finance daily operations and invest in newer telecommunications technologies so that the company has competitiveness compared to competing companies.

Data Privacy and Protection Security as a moderating variable to the effect of the Service Quality on Firm Performance has a positive and significant effect. Currently, the end-users of telecommunications services are very concerned with the privacy and security of services provided by companies. Data privacy and protection security provided by the

company will strengthen the service quality felt by the customer so that it can have a positive impact on company performance.

Data Privacy and Protection Security as a moderating variable on the influence of Brand Equity on Firm Performance has a negative and not significant effect. Application of Data Privacy and Protection Security can add to the requirements and procedures of a service experienced by consumers, such as having to re-register and upgrade the sim card used by consumers, although the purpose is good but if it makes consumers difficult, it can have a negative impact on the brand owned by the company, so there needs to be a good handling so that the application of Data Privacy and Protection Security makes users still comfortable using telecommunications services.

Data Privacy and Protection Security as a moderating variable on the effect of the Tariff on the Firm Performance has a positive and significant effect. Application of data privacy and protection security by the company will cause an increase in costs incurred by the company so that it will have an impact on the rates given by the company to end-users. Although increasing tariffs can maintain company revenues, companies still need to pay attention to reasonable tariffs so that company can still be competitive in the market.

VIII. CONCLUSION

Suggestions that can be given relating to this journal is, it is necessary to add variables related to telecommunications company operations, for data privacy and protection security. The Personal data protection bill, 2019 (Draft) introduces an obligation on the data fiduciaries to conduct a Data Protection Impact Assessment (DPIA) in order to reduce any harm or mitigate the risk for the data principals. Further research can be applied to different industries, for example, the Fintech or Financial Technology industry.

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