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Marketing Innovation on Personal Electronic Products

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Abstract. *In this dynamic era, to keep up with the trends on the market, companies should be able to make innovations. The word "innovation" among electronic companies in people's minds is usually associated with technological aspects of the products. Meanwhile, there is also another aspect of innovation that, over these recent years, has been developed and has also brought significant impacts on the products, which is called Marketing Innovation. In this study, the product is Personal Electronic Products, which include smartphones, tablets, and Laptops that are produced by South Korea and Japan's electronic companies. The marketing innovation that is implemented by the South Korea and Japan's electronic companies is measured using five dimensions, which are: Product Design Innovation, Packaging Design Innovation, Product Price Innovation, Product Placement Innovation, and Product Promotion Innovation. The study tests empirically the instrument for multidimensionality, reliability & validity using a confirmatory factor analysis (CFA) approach. The instrument is further found to be reliable, and has convergent and discriminant validity. In order to examine the marketing innovation that is implemented on the personal electronic products of South Korea and Japan's electronic companies, the study used 250 samples of personal electronic product customers in the area of Bandung City. The result of the study found that the marketing innovation scale is an established measurement to examine the marketing innovation process. From the result, also it can be seen that the customers of South Korea's personal electronic products are more perceived with the marketing innovation dimensions that implemented by the South Korea's electronic companies on its personal electronic products.*

Keywords: *Marketing innovation, personal electronic product, confirmatory factor analysis*

1. Introduction

Today customers are faced with huge amounts of options when it comes to pick electronic products, especially personal electronic products (smartphones, tablets, laptops). It's not only the product functions that matter to the customers, but the personal electronic products have also become the representative of their soul and characters, because each is a product that is very personal and they carry it everywhere.

In the very competitive market of personal electronic products, companies have to be able to attract the customers with their innovations. Innovations within the technology industry are most commonly associated with the technological aspect, which explains the developed functions of the products. Meanwhile, there is also another important type of innovation that must be a concern for the electronic companies. It's not only from its technological aspects but also from the non-technological aspects. One of them is innovation in marketing factors, the aspect that makes the companies in the electronic industry differ from each other in terms of their marketing character. Therefore, marketing innovation becomes essential to be concerned by the companies. As Vlachaki (2009:9) points out, innovation in product design, which is one of the aspects in marketing innovation, has the aim to give products a distinctive look to appeal to the customers on the new market segment.

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Vlachaki (2009:12) also explains that marketing innovations are aimed at better addressing customers' needs, opening up new markets, or newly positioning a firm's product on the marketwith the objective of increasing the firm's sales. Similar to organizational innovation, a marketing innovation must be part of a new marketing concept or strategy that represents a significant departure from the firm's existing marketing methods. Ren et.al. (2010:4) state that some companies might be over-concerned with the product innovation as an important aspect of competitive advantage while neglecting other aspects of innovation like marketing.

This concern reduces greatlythe capacity of a firm to create continuous competitive advantages derived from the marketing innovation aspects. While Moreira and Silva (2012:2)strengthen the aims of marketing innovation. In their journal, they statethatthe ability to successfully generate a variety of new products and find new forms of communicating and delivering themis very important for the organizationsbecause the activities of marketing is one of the essential factors for the company so that they will be able to adapt with the market and those immediate changes of new technologiesand anticipate the competitor's moves.

Ren et. al. (2010:4) believe that the factors of marketing innovations within a firmcan deliver a strategic value for the organizations. From the statements above it can be concluded that there is still lack of concern regarding marketing innovation, while it can actuallygive great impacts and values on the products. Therefore, this research is aimed to determine the factors that give impacts and values on the marketing innovation aspects of the personal electronic produts from the customers' perspective.

2. Literature Review

Oslo Manual (2005) is the guideline regarding innovation subject; it defines Marketing Innovation as the implementation of a new marketing method involving significant changes in the four parts of marketing mix, which are: product design or packaging, product placement, product promotion, or pricing. Along with the definition that has been stated before, by applying it into the programs on marketing we can define marketing innovation to include all the four Ps of marketing–product, price, promotion, and place. We focus our attention on radical innovations in these four areas; this is stated by Shergill and Nardgunkar (2005:9).And according to Harms et.al.(2002:135), marketing innovation can be very essential for the development of future markets, and it is really important to render concern to the two essential requirements, which are: direct contact of the firm with customers and the orientation towards competition on the market.

Concerning the first part, customers are of course the pivot elements when testing a new product or service, for which their satisfaction shown before will form the firm's strategic planning. That's why this research determines the marketing innovation performance from the customers' perspective. Harms et.al. (2002:135) also state that, due to the positioning and constant market change, it's important to permanently increase, since companies should be able to make constructive solutions to expand their success to other markets.

Table 1.
Literature of Marketing Innovation.

Authors (years): purposes and findings
Moore (2004): Points out that marketing innovation can be defined as innovation that improves customer-touching processes either in marketing communications or in consumers.
Chen (2006): States that marketing innovation is the development of the new marketing tools and methods that are aimed at two functions of marketing innovation: one that allows firms to acquire the information of the consumers and the other one to reduce the transaction cost with the consumer.
Trienekens et.al. (2008): Express that marketing innovation has the importance of understanding what customers look for within a product or service, where to develop a new product or service for a certain market, and where the implementation of the potential value and the growth of this market will determine the success of the product or service on the market.
Jiang (2008): Expresses that strategic choice is a really important aspect for marketing innovation. To achieve their expected objective, the company needs to create a series of related policies in order to manage their marketing innovation and minimize their strategic risk.
Maciariello(2009): Points out that the most important aim of the innovation targets the creation of new markets for the organization by promoting the new expectations. New standards and new ways of satisfaction of the aimed market will be established.
Ren et.al. (2010): State that marketing innovation can be a powerful tool to gain sustainable competitive advantage through the combination of inimitable various innovations on the marketing factors that deliver both value and profit of the products.
Naidoo(2010): Expresses that marketing innovation emphasizes on the low-risk modifications on the product, extensions and design changes that provide quick innovative solutions and, thus, it is considered as an attractive strategy in purpose to increase the sales.
Moreira and Silva (2012): Point out that the sustainability of marketing activities is an essential factor to be able to adapt to the market and anticipate changes that happen within the market. Therefore, the ability to successfully generate a variety of new products and services and to find new forms by innovating their way of communicating and distributing the products is really important for organizations.

Pang and Qu (2010:14), quoting Li, S.L. (2009), has summarized some of the principles in regard of marketing innovation. First of all, marketing innovation must add or increase value to the customers. If the marketing innovation doesn't satisfy customers or doesn't provide value to customers, it cannot be considered as a successful marketing innovation. Secondly, marketing innovation must be helpful in terms of the competition among the market. Thirdly, marketing innovation that is implemented must be effective for the company. Companies should not attempt marketing innovation only for the sake of innovation. Every innovation program that is implemented must be able to bring profit to the company at present or in the future. Fourthly, marketing innovation must have sustainability. Fierce competition and rapidly changing market compel companies which want to survive to keep innovating. Godin (2005:16) states that, in short, a firm which is able to present a product or service to customers in a very different way can devise marketing innovation. Organizational and marketing innovations are considered as non-technological, but both are very important for technological innovations. However, it is not possible for a firm to have great trading success by only relying on its technological innovation and without marketing innovation. Seth Godin also states that being successful in marketing is a result of being able to choose a target group which spreads an idea of a product, and a product is developed specifically to satisfy that special target group.

For the purpose of the study, after reviewing many marketing innovation literatures(as shown in Table 1), there exists an opportunity to study, examine, and validate the construct of marketing innovation. So, this study utilizes Oslo Manual's marketing innovation definition as the guideline on the dimensions of marketing innovation.The following explains the definitions on each dimension of the marketing innovation that is examined in this study based on the innovation guideline, i.e., Oslo Manual (2005). Product Design Innovation is defined as product changes in the design of the form and appearance that do not alter the product's functions or user characteristics.

Packaging Design Innovation is defined as the changes on the product's packaging design and appearance that do not alter the functions and user characteristics. Product Price Innovation is defined as innovation in pricing involving the use of new pricing strategies to market the firm's products or services. Product Placement Innovation is defined as new marketing methods in product placement primarily involving the introduction of new sales channels. Sales channels here refer to the methods used to sell products and services to the customers, and not logistics methods (transport, storing, and handling of products) that deal mainly with efficiency. And the last, Product Promotion Innovation is defined as new marketing methods in product promotion involving the use of new concepts for promoting a firm's goods and services.

The Japan and South Korea personal electronic products become the main object on this study. With the growing economy and expanding middle-class population, Indonesia is a potential market for electronic products. Furthermore, brands from Japan and South Korea are prominent players in the market. Based on the data of Popular Brand Index results from W&S Indonesia market research 2014 in category of smartphone Samsung (South Korea) and Sony (Japan) are in the top five most popular brands in Indonesia.[1]

Thus, the research questions of this study are: firstly, whether the marketing innovation that is implemented on personal electronic products is determined by the dimenstions of product design, packaging design, product price, product placement, and product promotion innovations; secondly, whether the proposed model of marketing innovation is a valid measure. So, based on the proceeding discussions, the following hypothesis is investigated in this study: there is a relationship between the dimensions of marketing innovation and their underlying latent constructs.

2.1 Equation

The study uses the AVE (Average Variance Extracted) and the CR (Construct Reliability) to get the result of validity and reliability of each item that is used in this research. Said (2011:1099) states that the construct validity is determined by the average value AVE (Average Variance Extracted) using the following formula:

$$AVE = \frac{Sum\ of\ Standardize\ Loading\ Square}{Sum\ of\ Standardize\ Loading\ Square + Measurement\ error}$$

Furthermore, Said, Badru, and Shahid (2011:1099) express that construct Reliability (CR) is intended to determine the consistency of construct validity indicator. Construct Reliability is calculated using thefollowing formula:

$$CR = \frac{Square\ of\ Standardize\ Loading}{Square\ of\ Standardize\ Loading + Measurement\ error} \quad [2]$$

**Measurement error = 1-(Standardized Loading)²*

3. Method

3.1. Samples

Data are collected from the customers of the personal electronic products of South Korea

[1] W&S Indonesia, (2014). *Indonesia's Smartphone Market 2014*. [online] http://nusaresearch.com/. Available at: http://nusaresearch.com/upload/userfiles/files/TOPLINE%20FINDING_Smartphone_ENG.pdf [Accessed 7 Dec. 2014].

and Japan's electronic companies The participant of this study are customers of personal electronic products in Bandung, Indonesia. The sampling procedure used for the study is convenience sampling. A total of 250 customers (125 for each object) have been randomly selected; almost 250 samples are valid for data analysis, representing a response rate of 100 percent. Most of the respondents contribute in this research by fulfilling the online questionnaire that is provided by the writer. The respondents voluntarily fill the online questionnaire and are asked their perspectives on the implementation of marketing innovation aspects that they see within the personal electronic products and the brands that they are currently using at the moment they fill the questionnaire. They give answers on the items of the questionnaire that are already provided by using five-point Likert Scale (ranging from 1, indicating strongly disagree, to 5, indicating strongly agree). The high response rate is due to the easiness to fill the questionnaire, and it is simply related to the products that they are using. And after the respondents fill the questionnaire, the online system collects all respondents' answers in a cloud database.

3.2. Model Testing

After the model is specified, this study implements confirmatory factor analysis (CFA) method as an analytical tool to test the validity of marketing innovation model. Curran, Finch and West (1996: 16) point out that CFA requires the investigator to specify both the number of factors and the specific pattern of loadings for each of the measured variables on the underlying set of factors. Therefore, CFA method is appropriate to be used in this study, as the model has been specified to consist of some dimensions to be tested (i.e., marketing innovation consists of 5 dimensions). Furthermore, Suhr (1999:1) explains that confirmatory factor analysis (CFA) is a statistical technique used to verify the factor structure of a set of observed variables. CFA allows the researcher to test the hypothesis to see if there is a relationship that exists between the observed variables and their underlying latent construct(s) (Suhr 1999:1).

CFA is implemented to measure and give a confirmation of the theory. CFA measurement theory specifies how measured variables represent the constructs contained in the theoretical model, where researchers already understand comprehensively the number of factors in the model, and the relationship between the factors. Suhr (1999: 1) points out that: "The researcher uses knowledge of the theory, empirical research, or both, postulates the relationship pattern, and then tests the hypothesis statistically". The study applies construct validity as one of the most important validities when evaluating a research measurement. This study considers GFI, AGFI, TLI, and RMSEA as the measurement of model fit index that is commonly used. The Goodness-of-fit (GFI) and Adjusted Goodness-of-fit (AGFI) indices are also Absolute Fit Indices-with 0.85 considered acceptable. Lievens and Anseel (2004: 301), quoting Medsker, Williams, and Holahan (1994), assert: "The goodness-of-fit index (GFI) as well as incremental fit statistics such as the comparative fit index (CFI) and the root mean square error of approximation (RMSEA) are used. For both GFI and CFI, values > .95 constitute good fit, and values> .90 acceptable fit." Chi-square (x^2) and its associated probability/p-value are also used in criteria model fit for this study, which should not be statistically significant if a good model fit already exists (Gallagher et.al.,2008: 265). Furthermore, Suhr (1999:1) explains that: "The chi-square test indicates the amount of difference between expected and observed covariance matrices."

Furthermore, Lievens and Anseel (2004: 301), quoting Browne &Cudeck (1992), state: "For the RMSEA, it has beensuggested that values < .05 are considered good fit, values in the .05 to .08 range acceptablefit, values in the .08 to.10 range marginal fit, and values > .10 poor fit." Standardized Factor Loadings should exceed 0.50 and ideally be above 0.70, with statistical significance, in order to

demonstrate high convergence on a common point (Hair at Gallagher et.al.,2008:267).

This study examines the efficiency of the proposed model by testing the measurement model and the overall model. In the first step, a statistics test has been conducted on the measurement model using the assessment of the second-order factor model. To establish construct validity, it examines: (a) the relationship between the observable indicators (items) and their latent constructs (five-dimensions), and (b) correlations among the dimensions. In the second step the test has been conducted on the overall model. The results of the structural model test determine the relationship between the four dimensions and the variable. If the data of the RMSEA, SRMR, TLI, CFI, GFI, NFI, and AGFI estimates are statistically significant in the structural equation model, then the result indicates that the model of co-creation is valid.This study is categorized as a second-order category; the first derivative is the dimension, followed by item (see Table 3). The measurement model is first assessed to confirm that the scales are multidimensional and reliable. Further analysis utilizes the structural equation modelling (SEM) techniques using the SPSS ver. 18.0 and the Analysis of Moment Structure (AMOS) program ver. 18.0. SEM techniques are used to determine the effectiveness of the model and the proposed hypotheses. In developing the SEM model, the conceptualization of the model can be described as a second-order factor model. The result of first measurement model shows that should be dropped, but in the second test it already shows the model fit. The results of CFA are presented in Table 3. Cronbach's coefficient alpha estimates for the five dimensions of marketing innovation that are valid range between 0.52 and 0.90, exceeding the 0.50 minimum values for around 120 samples based on Hair's statement. The study applies the standardized factor loadings and average variance extracted (AVE) of each construct to verify the convergent validity. For each construct, the standardized factor loading is above 0.5 and the AVE is higher than the 0.5.

4. Results and Discussions

4.1. Descriptive Statistics

The demographic data have been collected to allow the researcher to obtain a deeper understanding of the participants' responses. Table 2 below is the summary of the descriptive statistics of the samples.

Table 4.1.
Demographic Data of the Respondents

Measures	**Options**	**f**	**%**
Gender	Male	148	⁄
	Female	102	⁄
Ages	<21	42	⁄
	21-35	188	⁄
	36-45	15	›
	>46	5	›
Professions	Students,	156	⁄
	Entrepreneurs,	12	›
	Private Companies Employee,	22	›
	State Owned Enterprise Employee,	37	⁄
	Others	23	›
Duration of Using the product	< 3 months	18	›
	3 – 6 months	24	⁄
	7 months – 1 year	47	⁄
	> 1 year	161	⁄

From the table above, it can be seen that the majority of the respondents that were studied are male, with most of them are 21-35 years old, with the assuption younger people around that age are more understand about the products that they are using, and most of the respondents are students. Students considered as the very active user of electronic products, therefore they also have sensitive considerations towards the electronic products that they are using in daily basis, in this case is personal electronic products. Majority of the respondents have been using the product for more than a year, this is related to the product cycle of personal electronic products that have quite long period, but the number of the respondents that have been using the product for 7months – 1year is shows quite significant number too.

The study has classified the respondents into two categories, which are South Korea's personal electronic product customers and Japan's personal electronic product customers. It has been done to test the model in two different groups of customer. 125 respondents data has been obtained for each category, the number itself are based on the number of the estimate parameter (indicator) which is 25, and to test the CFA model, it needed 5 observations for every estimated parameter Gallagher, et al (2008:263), therefore it is 25x5 = 125 for each category.

4.2. Scale Development

A survey instrument consisting of 25 items was used on this study. The instrument was developed from the definition of marketing innovation based on Oslo Manual 2005 which is, the implementation of a new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing. so as to effectively address all the aspects of marketing innovation.

In order to validate empirically the MARKETING INNOVATION SCALE, this study adopted scale development that was explained based on the suggestions from Churchill (1979). Churchill's concept has been adopted by many scholars in marketing as one of the most comprehensive steps for scale development (Rufaidah 2006, 2012). Churchill outlines eight basic steps for developing self-report measures of marketing constructs. However, this study combines the first seven steps proposed by Churchill to develop the required scales which are: specify the domain of construct, generate a sample of items, questionnaire scaling and questionnaire development, collect data, asses the validity and reliability. The instrument in this study is generated from five dimensions of marketing innovation variable, and the test was conducted to examine the dimensionality of the instrument.

As Hair (2006) explains, In CFA test with around 120 sample, the items with the loading factor score lower than 0.5 can be cut off, therefore the models that are used has been adjusted with remained items that shows loading factor score greater than 0,5 which means the items has significant influence in constructing the model. A statistic test using AMOS SPSS software has been conducted, and the results can be seen in the table below:

Table 4.2.
Dimensions and Items of The Study

Dimension(first order) & Items (second order)	**SFL KOR**	**SFL JAP**
PRODUCT DESIGN INNOVATION (PRDS)		
	KOR: CR=0.767 AVE=0.405	**JPN: CR=0,854 AVE=0,508**
The novelty of the new products	0.52	0.50

design form.(X11): The new product design form of (South Korea/Japan) electronic product is a new design that have never used before.		
The attractiveness of the new products design form.(X12):The new product design form of (South Korea/Japan) electronic products is attracting me.	0.67	0.56
The innovativeness of the products design form. (X13): The new product design form of (South Korea/Japan) electronic products are innovative	0.38	0.77
The novelty of the new product designs appearance. (X14): The new product design appearance of (South Korea/Japan) electronic product is a new design that have never used before.	0.52	0.54
The innovativeness of the new product design appearance in compare to other brands. (X15): The new product design appearance of (South Korea/Japan) electronic product is more innovative than the competitors.	0.83	0.87
The new product design appearance represent the innovative value of the product. (X16): The new product design appearance of (South Korea/Japan) electronic product exhibit the innovative value within the product.	0.59	0.92
PACKAGING DESIGN INNOVATION (PAC)		
	KOR: CR= 0.81 AVE=0.68	**JPN: CR= 0,822 AVE=0,484**
The innovativeness of the new packaging design. (X21): The new packaging design form of (South Korea/Japan) electronic products are sophisticated and never been used before.	0.44	0.65
The efficiency of the new packaging's form. (X22): The new packaging design form of (South Korea/Japan) electronic products are efficient	0.27	0.53
The packaging design in compare to other brands. (X23): The new packaging design form of (South Korea/Japan) electronic products is unique in compare to the other brands.	0.82	0.73
The innovative value that added by the packaging design.(X24): The	0.83	0.80

packaging design appearance of (South Korea/Japan) electronic product, represent innovative value of the product		
The exclusivity value of the packaging design. (X25): The packaging design of (South Korea/Japan) electronic product added exclusivity value to the product.	0.32	0.74
PRODUCT PRICE INNOVATION (PRICE)		
	KOR: CR= 0.659 AVE=0.493	**JPN: CR=0,695 AVE=0,364**
The compatibility between desired price from customers and price offered by the company. (X31): The new product price of (South Korea/Japan) electronic products are compatible my purchase ability.	0.31	0.64
The compatibility between desired price from customers and the quality offered in the products.(X32): The product price of the new (South Korea/Japan) electronic product is worth it with the quality that offered within the product.	0.76	0.56
The price in compare to other brands. (X33): The price variance of (South Korea/Japan) new electronic product is better in compare with the other brands in the same level.	0.64	0.63
The exclusivity value of the product price. (X34): The product price of (South Korea/Japan) electronic products added exclusivity value to the products.	0.34	0.58
The price promotion innovation. (X35): There are a lot of innovative price promotions to purchase (South Korea/Japan) electronic products.	0.14	0.47
PRODUCT PLACE INNOVATION (PLACE)		
	KOR: CR=0.862 AVE=0.7578	**JPN: CR=0,817 AVE=0,692**
The sales place (official stores) innovativeness added unique experience to the customers. (X41): The product presentation in (South Korea/Japan) electronic product official store gives unique experiences for me.	0.90	0.89
The atmosphere and the appearance of the official stores increase exclusive value to the product. (X42): The display and store atmosphere of (South Korea/Japan) electronic product	0.84	0.77

official stores added exclusive value to the products.		
The easiness of the product offered through cooperation with banks, credit card, or communication provider. (X43): The cooperation of (South Korea/Japan) electronic company with banks, credit card, or communication provider made me easier to purchase their products.	0.10	0.46
The innovativeness of the official online retail stores. (X44): The official online retail stores of (South Korea/Japan) electronic products are innovative.	0.33	0.43
PRODUCT PROMOTION INNOVATION		
	KOR: CR= 0.752 AVE=0.506	**JPN: CR=0,807 AVE=0,515**
The innovativeness of the advertisements on mass medias (X51): The advertisements of (South Korea/Japan) electronic products in the mass medias are innovative and new.	0.13	0.71
The awareness of the logo or products in popular entertainment channel). (X52): The logo and products of (South Korea/Japan) electronic companies are easily can be seen in the popular entertainment channels (movies, sports, youtube, etc).	0.59	0.76
The innovativeness of the official website in delivering information about the products. (X53): The official website of (South Korea/Japan) electronic product delivering their product information innovatively.	0.79	0.81
The innovativeness of the internet commercials. (X54): The internet commercials of (South Korea/Japan) electronic products are innovative.	0.74	0.57
The attractiveness of the products offered through promotion of credit card, bank, or communication provider. (X55): Product promotion offers from (South Korea/Japan) electronic company through their cooperation with bank, credit card, or communication providers are attractive.	0.10	0.49

Note. SFL = Std. Factor Loadings, AVE = Average Variance Extracted, CR = Composite Reliability.

The result of the test in the table above shows that there are some indicators that have lower score than 0.5, especially in the South Korea's column, therefore it should be removed from the model. But, the sub-variable model itself shows that they are effective to measure the marketing innovation scale, because every sub-variable has at least two indicators that have higher score than 0.5, which means the indicators are valid in constructing the model.

Table 4.3.
Parameter Estimates for Structural Model (Japan's Product Customers)

Relationships	**PE**	**S.E**	**CR**
Product Design Innovation (PROD) ← Marketing Innovation	1.000		
Packaging Design Innovation (PACK)← Marketing Innovation	1.752	.468	3.743
Product Price Innovation (PRICE)← Marketing Innovation	2.517	.643	3.914
Product Place Innovation (PLACE)← Marketing Innovation	3.001	.738	4.064
Product Promotion Innovation (PROMO)← Marketing Innovation	2.370	.624	3.800

Table 4.4.
Parameter Estimates for Structural Model (South Korea's Product Customers)

Relationships	**PE**	**S.E**	**CR**
Product Design Innovation (PROD)← Marketing Innovation	1.000		
Packaging Design Innovation (PACK)← Marketing Innovation	1.827	.520	3.515
Product Price Innovation (PRICE)← Marketing Innovation	1.916	.554	3.460
Product Place Innovation (PLACE)← Marketing Innovation	2.142	.619	3.462
Product Promotion Innovation (PROMO)← Marketing Innovation	1.566	.519	3.016**

*Note. PE = Parameter Estimates, Dashes indicate that the factors are fixed at 1.0; Parameter estimates were found in standardized regression weight; C.R. = critical ratios were found in unstandardized regression weight. ** p< 0.05.*

The two tables above shows that the 5 dimensions has influence in constructing the concepted marketing innovation model. It can be seen that the probability score exceeded the recommended value, which means the dimensions has influence but not really significant. However in the South Korea's table, the "product promotion innovations" shows that it has significant influence. In the last two table, the overall fit of the measurement models was found to be adequate. The Chi-square/df ratios in both objects were lower than 5.0 (3.665 & 2.452). The root mean square error of approximation (RMSEA) value are 0.147 in Japan's customer and 0.108 in South Korea's customers, which are higher than 0.08, indicating poor fit (Browne and Cudeck, 1992) as quoted by Lievens and Anseel (2004:301). The standardized root mean residual (SRMR) in Japan's customer is 0.092 which is higher than the recommended value that is equivalent or less than 0.08. In South Korea's customers the SRMR value is 0.073

which is fit with the recommended value of ≤ 0.08. In addition the indices of of the TLI, CFI, GFI, and NFI estimates in both objects are founded lower than the recommended value which is >0.90. In AGFI index in both objects are also lower than the recommended value of 0.8, which are only 0623 in Japan's customers and 0.772 in South Korea's customers, indicating poor fit. Because they are lower than the recommended level of 0.8 (Zikmund, 2003). The result of the measurement model showed that all dimensions to measure the variable of marketing innovation were valid and most of the items to measure the respective dimensions are valid with average loading factor above 0.5. The measurement model in South Korea's personal electronic products customer shows better number in model fit criteria through GFI with 0.844, indicating marginal fit, while the GFI the number in Japan's customers is only 0.700. In overall, as the construct validity and reliability exists for the scale of marketing innovation of personal electronic products customers, from the two results of the objects (South Korea and Japan's personal electronic products customers), it can be seen that the results of the model test in South Korea's customers shows better number, with most of the indices already close to the recommended value.

Table 4.5.
The Results of The Model Tests (Japan's Product Customers)

	Default model	**Independent model**	**Recommended value**
X^2	674.271	1810.695	
df	184	210	
X^2/df	3.665	8.622	<5
RMSEA	.147	.248	<0.08
SRMR	.092	.283	≤0.08
TLI	.650	.000	>0.9
CFI	.694	.000	>0.9
GFI	.700	.264	>0.9
NFI	.628	.000	>0.9
AGFI	.623	.191	≥0.8

Table 4.6.
The Results of The Model Tests (South Korea's Product Customers)

	Default model	**Independent model**	**Recommended value**
X^2	176.533	767.200	
df	72	91	
X^2/df	2.452	8.431	<5
RMSEA	.108	.245	<0.08
SRMR	.073	.240	≤0.08
TLI	.805	.000	>0.9
CFI	.845	.000	>0.9
GFI	.844	.409	>0.9
NFI	.770	.000	>0.9
AGFI	.772	.318	≥0.8

*Note. RMSEA = Root Mean Square of Approximation; SRMR = Standardized Root Mean Residual; TLI = Tucker-Lewis Index; CFI = Comparative Fit Index; GFI = Goodness-of-fit Index; NFI = Normed Fit Index; AGFI = Adjusted Goodness-of-fit Index. ***p< 0.00.*

Although the measurement of the model is a valid model, however the model has not fulfill a model fit. It could be argued that the time in obtaining the data of the respondents is one of the main factors to be considered in collecting the data, because most of the respondents are using more than one electronic device in the present time. That situation could likely reduce the focus the respondents in fulfilling the questionnaire. However, in overall, this study has satisfied the main objective of the study which is to test the construct validity.

This study has implemented the testing of dimensions of marketing innovation in the personal electronic customers, in this case they are South Korea and Japan's personal electronic product customers. It has proven that the confirmatory measurement of marketing innovation model was valid. More specifically, a multi-item measure of marketing innovation has been done by investigating it equivalence across the subjects of personal electronic product customers in Bandung city area were proven valid. The study of the measurement model shows that all dimensions are valid in meausring the research variable (marketing innovation) and although not all of the items are valid, but they are enough in measuring the dimensions (product design innovation, packaging design innovation, product price innovation, product place innovation and product promotion innovation). Although the study would recommend to increase the minimum loading factor of the item to 0.60 in order to achieve an improvement in the value of the model fit, more items has to be dropped from the model if this alternative is done.

As Gallagher et al (2008:267) quoted Hair et al. (2006) that Standardized Factor Loadings should exceed 0.50 and ideally they are above 0.70, with statistical significance in order to demonstrate high convergence between the aspects. The study has filled the gap from the literature of measuring the marketing innovation construct and particularly in providing the first scale to measure the concept of marketing innovation, therefore it could be justified that the present scale of marketing innovation scale is as acceptable.

5. Conclusion

In conclusion, this study aims to examine the empirical dimensions of marketing innovation's construct. Whereas the result of the study showed that most of the items that constructed the five dimensions of marketing innovation are valid with loading factor higher than 0.50. But, this model not fully meet "Fit" index, with the model test results indices shows slightly lower number than the recommended value. There are many external factors that may influenced the model that does not fit, such as, the research, the respondents, the number of respondents, or the objectiveness of the respondents in answering a variety of questions in the questionnaire.

The main purpose of the study has been achieved, which is to test marketing innovation model for multidimensional, reliability, and validity using confirmatory factor analysis (CFA). However, this study has limitations, because the research was only performed for the customers in one place/city. Thus, the study recommends that further research could use a larger number of sample and implementing the model in various categories of respondents in the term of place, and assessing it in the different customers of personal electronic products. Further researches also may expand the object and scope of the research, with the very dynamic trend in electronic industry, and personal electronic products specifically, it is very possible to expand the scope of the research.

The study of the measurement model of the second-order category shows that most of the items are valid in measuring the dimensions (product design innovation,

packaging design innovation, product price innovation, product place innovation, and product promotion innovation). Therefore, the items are valid in measuring the dimensions and the dimensions are valid in measuring and constructing the research variable (marketing innovation). Based on the CFA test results on South Korea and Japan's customers, it can be seen that the customers of South Korea's personal electronic products are more perceived with the marketing innovation dimensions that implemented by the South Korea's electronic companies on its personal electronic products. In other word, it means that South Korea electronic companies has implemented more effective marketing innovations than Japan's electronic companies on their personal electronic products. From the result of the study, also it has been proven that this marketing innovation scale is an established measurement to examine the marketing innovation process.

The result also shows that using confirmatory factor analysis approach to test the model validity that is conducted through SEM is an essential way for this study. The paper itself contributes to study about the component of marketing innovation by strengthening the concept of a multidimensional marketing innovation model. As the managerial implication, this study emphasize that within the technological industry, companies also should be aware of the importance of their marketing aspect, by implementing marketing innovation, as it dimensions will enhance the differentiation and the value of the company and its product in this very dynamic industry to be able to gain the attention of the customers in the market.

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