

## CUSTOMER LOYALTY IN CHEMICAL COSMETICS: ANALYSIS OF PRODUCT DIFFERENTIATION, SERVICE DIFFERENTIATION, AND PRICE PERCEPTION

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### ABSTRACT

*The cosmetics industry is one of the leading industries in Indonesia. The challenge today is more than 90% of its raw materials still have to be imported. PT Nardevchem Kemindo is an importer and trading company of chemical raw materials for the cosmetics industry. This study aims to examine the influence of product differentiation, service differentiation and price perception on customer loyalty. The research population is 268 customers who are cosmetics manufacturers. The sampling technique is proportionate stratified random sampling, so selected 75 customers. Research data is collected by using questionnaire from respondents who are leaders or representatives of the company. The analysis technique is multiple linear regression with 5% significance level. The results show that partially product differentiation and service differentiation have positive and significant influence to customer loyalty, while price perception variable has no significant influence to customer loyalty. Simultaneously product differentiation, service differentiation and price perception have positive and significant influence to customer loyalty. Based on this study, PT Nardevchem Kemindo needs to do a marketing mix strategy by combining variable of product differentiation, service differentiation and price perception, with emphasis on dimension of product form, ordering ease and lower price than competitor.*

**Keywords:** customer loyalty, price perception, product differentiation, service differentiation

### INTRODUCTION

Creating customer loyalty by Kotler and Keller (2012:145) is the heart of every business. Hurriyati (2010:128) states that having a loyal customer is the ultimate goal of all companies. Sofjan Assauri (2013:14) defines customer loyalty as a tendency for customers to choose the value of the organization offered over the competitor's bid alternatives. Griffin (2009:5) mentions that two important conditions related to customer loyalty are customer retention, the length of the relationship with the customer and the total customer share, indicating the percentage of the customer budget spent on the enterprise

The cosmetics industry is one of the leading industries in Indonesia which is growing rapidly. Euromonitor estimates that the Indonesian cosmetics industry market in 2013 has reached more than IDR 60 trillion. According to the ministry of industry of Republik Indonesia, the challenge facing today is more than 90% of its raw materials still have to be imported.

PT Nardevchem Kemindo is one of the distributor and supplier of chemical raw materials for the cosmetics industry in Indonesia. As part of Nardev Chemie Pte. Ltd. Singapore, this

company is main player of chemical raw material suppliers in Indonesia (operating in Indonesia since 1998) and quite reckoned among other suppliers today. Sales data of Chemical Cosmetics Division of PT Nardev in 2011-2016 shows the sales growth as shown in Figure 1. The graph shows a very sharp sales growth fluctuation with negative growth for 2 consecutive years, which is equal to minus 6% in 2014 and minus 14% by 2015. This indicates that there is a problem that will disrupt the business continuity of the company, if not immediately solved.

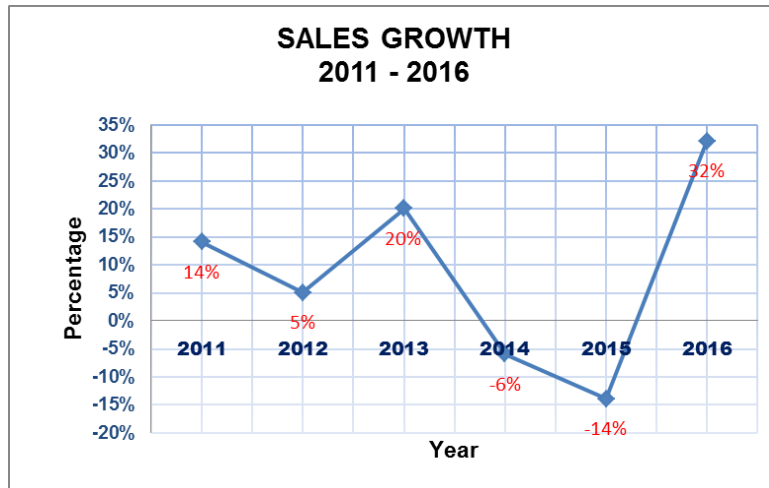


Figure 1. Growth of Sales Division of Chemical Cosmetics 2011 – 2016

The causes of these fluctuations and negative growth of sales are influenced by competition between similar suppliers and PT Nardev's competitive advantage. The marketing strategy of PT Nardev is main factor to win competition with competitors to get loyal customers. Loyal customers have the features of: repeat order regularly, do cross buying products, showing immunity to the pulling of competitors and even referring to others.

Judging from the characteristics of these loyal customers, researcher analyzed PT Nardev customer data in 2014, 2015 and 2016 whose condition can be seen from table 1.

Table 1. Customer Data 2014 – 2016

Category	2014		2015		2016	
	Number	%	Number	%	Number	%
Total customer	258		271		268	
Customer with increasing sales			80	30%	110	41%
Customer with decreasing sales			109	40%	73	27%
New customer	-		82	30%	85	32%
Lost customer in next year	69	27%	88	34%		

Source: PT Nardev internal data, processed (2017)

From the table can be seen there is a very high turn over customers, i.e. 27 % customers in 2014 did not do repeat order in 2015 and 34 % customers in 2015. This indicates there is a loyalty problem, because most of them will move to another suppliers. According to Jill Griffin, a customer loyalty expert from the United States, the ideal company, each year only lose 5-10% customers (Griffin, 2009: 15). Thus, since PT Nardev's lost customer is more than 25%, PT Nardev's customer loyalty is still low.

Customer loyalty is closely related to the marketing strategy. Researcher discussed with PT Nardev's marketing team about the determinants of low customer loyalty seen from the

urgency factor in purchasing decisions and repurchasing. The results of the discussion concluded that the urgency factor from the highest to the lowest are : product, service, price, promotion and distribution. Promotion and distribution factors are less decisive purchasing decisions. So the 3 main factors that influence the purchase decision of the customer is related to product, service and price.

Viewed from the product side, the researcher analyzed the product categories sold in 2016. Analysis was done to determine the ability of PT Nardev in providing all categories of cosmetics raw materials. The category of cosmetics raw materials according to Wasitaatmadja (2011: 43), a cosmetics expert from the University of Indonesia, are: base/vehicle, active ingredient, stabilizer, additives. The results of the analysis as in table 2.

**Table 2. Product Mapping of PT Nardev Year 2016**

Category of Raw Material	Function & Example	Percentage
Base	For solvent & base : wax, silicone base, surfactant, mica	26%
Active Ingredient	For product claim : whitening, anti aging, anti wrinkle, anti acne,others	42%
Stabilizer	To stabilize the product: emulsifier, preservative, suspending agent, binder, thickener	13%
Additive	For product performance : colour, fragrances, bead, pearlizer, emollient, conditioner, others	15%
Others	Device, home care, water treatment	4%
Total		100%

Source: PT Nardev internal data, processed (2017)

From the data obtained picture that PT Nardev has all categories of cosmetics raw materials even have device / measuring instrument and cleaning products / waste treatment that are included into other categories. Thus, PT Nardev has the ability to provide almost all of the cosmetics raw materials which meaning have good product differentiation.

Products offered must be delivered with excellent service and better than competitors. Excellent service is characterized by the lack of complaints from customers. For this, the researcher analyzed the complaints received by PT Nardev's sales support during October 2016. The analysis was carried out by incorporating existing complaints into service differentiation parameters according to marketing experts from United State, Kotler and Keller (2012: 352), namely: ease of order, Installation, training and customer consultation, as well as maintenance and repair. Judging from its type, the complaint covers almost all the differentiation parameters of service. In February 2017, an audit was also conducted by one of the customers on delivery service and warehouse conditions. PT Nardev received an emerging performance assessment with a conditional approved record (still needs to be improved for several parameters). From these two things, can be concluded PT Nardev still need to improve services, especially the problem of delivery and preparation of goods in the warehouse. This shows that PT Nardev's service differentiation is still low.

Price is very important from sellers and buyers side. Judging from the comparison with prices in the market in the second quarter of 2016, for some commodity products, PT Nardev's price is higher than the market price. In October 2016, PT Nardev lost e-bidding in a customer for

a product due to price issues. Based on the above 2 facts, it can be concluded that under certain conditions PT Nardev's price is valued by customers higher than competitors and market price. This indicates that PT Nardev's customer price perception is still low.

Based on the above phenomenon, PT Nardev's customer loyalty is still low and mainly influenced by 3 factors which are related to product differentiation, service differentiation and price perception, hence research aim to examine: (1) the influence of product differentiation on customer loyalty, (2) ) the influence of service differentiation on customer loyalty, (3) the influence of price perceptions on customer loyalty and (4) the influence of product differentiation, service differentiation and price perception simultaneously on the customer loyalty.

## **LITERATURE REVIEW**

Marketing by Kotler and Keller (2012:27) is meeting needs profitably. A more fundamental definition, as Kotler and Armstrong (2012:28), marketing is managing customer relationships profitably, the purpose of marketing is to attract new customers by promising superior value and sustaining and growing existing customers by providing customer satisfaction. Sofjan Assauri (2013:1) emphasizes the creation and addition of value in marketing, that marketing today is more a function and process than any other organizing functions such as finance and accounting as well as R&D.

Marketing management is the art and science of selecting the market target and grabbing, maintaining and growing customers by creating, delivering and communicating superior customer value (Kotler and Keller, 2012:27). One of the application of marketing management is a marketing mix strategy which is a strategic plan that includes the overall mission and objectives of the company. Marketing mix is a marketing strategy by controlling the 4P factors (product, price, place and promotion). The purpose of this marketing strategy is to create value for customers and gain mutually beneficial relationships. The company determines which customers will be served (segmentation and targeting) and how (differentiation and positioning).

There is a fundamental difference between the marketing of consumer's goods and industrial's goods. According to Subroto (2011:1) initially the marketing concept is linked to product offerings for consumer's goods. In its development also marketing products and services for industrial / organizational purposes that each have different marketing strategies.

Related to products for industry, Kotler and Keller (2012:349) divides industrial products into 3 categories: (1) materials and parts, (2) capital goods: installations (such as buildings) and equipment (such as computers), (3) supplies and business services. By looking at the character and specifications, the chemical product for cosmetics in this study is industrial product which is included in the category of manufactured material.

Subroto (2011:147) explains that the product is a very important factor in the business, therefore the product needs to be adjusted to market needs. Adjustments can be done by improving quality, but keep in mind that relying on high quality alone does not guarantee success in the market. Therefore, product strategy management in industrial marketing has an important role in maintaining the resilience of the company. Among the product strategy is by differentiation.

Sofjan Assauri (2013: 61) explains that differentiation is the company's attempt to give a different appearance to the customer's eye and mind. Differentiation is important because the customer will emphasize 2 reasons in purchasing goods or services: the choice of goods / services is better and the price is cheaper. According to Kotler and Keller (2012:351), to be

branded, products must be differentiated by: (1) form, (2) features, (3) customization, (4) performance quality, (5) conformance quality, (6) Durability, (7) reliability, (8) repairability, (9) styles. According to the category and character of the chemical raw materials, the dimensions used to measure product differentiation in this study are: (1) form, (2) customization, (3) performance quality, (4) conformity quality and (5) reliability.

Service, according to Kotler and Keller (2012:378) is any art or performance of one party that can be offered to another party that is essentially intangible and does not result in any transfer of ownership status. There are 5 categories of services seen from the number of major and minor components of the total on offer are: (1) pure tangible goods without service, (2) tangible goods with accompanying services, (3) hybrid goods, tangible goods at once Service, (4) service as primary with accompanying small items, (5) pure service. Industrial products such as chemical raw materials for the cosmetics industry, not only offer goods but also needs consulting services and others. Thus it is as category 3, a hybrid between tangible products and services.

In order for the product to be known and distinguishable from other products, the seller must add service differentiation. According to Kotler and Keller (2012:352) service differentiation consists of: (1) ordering ease, (2) delivery, (3) installation, (4) customer training, (5) customer consultation, (6) maintenance and repair. In accordance with the marketing character of chemical raw materials for cosmetics industry, service differentiation dimension used in this study are: (1) ease of order, (2) delivery, (3) customer training and (4) customer consultation.

According to Kotler and Keller (2012:405) price is an element in the marketing mix that generates company revenue. Tjiptono (2008:151) asserts that price is the only marketing mix that provides income for the company. Therefore decisions and pricing strategies play an important role in every company. According to Sofjan Assauri (2013:192), prices have tactical and strategic roles. Tactically, pricing is intended to capture whatever value is possible. Strategically, pricing is a strategic choice of target market, positioning strategy, product determination (related to quality and features) and distribution strategy.

Hurriyati (2010:54) cites the opinion of Zeithalm and Bitner, that there are 3 basic pricing that are commonly used: (1) cost based pricing (2) competition based pricing and (3) demand based pricing. From the consumer's point of view, Tjiptono (2008:151) explains that prices are often used as an indicator of value when they are linked to perceived benefits of goods and services. Values can be defined as the ratio between perceived benefits to the price. Price has 2 main role in buyer decision process that is role of allocation and role of information. In the allocation role, prices help buyers allocate their purchasing power to a wide variety of (choice) goods and services (affordable). In the role of information, prices play a role in educating buyers about product factors, such as quality.

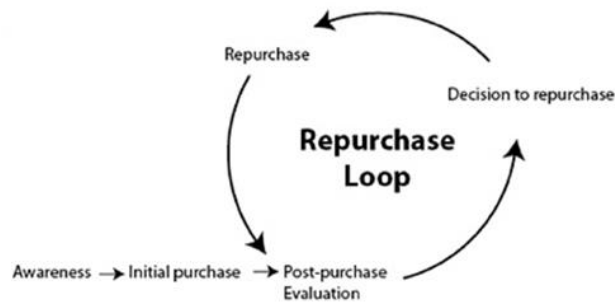
Based on the opinions of the experts above, the price perception is the customer's perception of a number of strategies from the seller in order to provide the value and benefits of the products that are exchanged with the customer. In this study, the dimensions of price perception are: (1) affordable, (2) lower than competitors and (3) in accordance with the benefits.

Creating customer loyalty by Kotler and Keller (2012:145) is the heart of every business. Hurriyati (2010:128) states that having a loyal customer is the ultimate goal of all companies. Sofjan Assauri (2013:14) defines customer loyalty as a tendency for customers to choose the value of the organization offered over the competitor's bid alternatives. The size of customer

loyalty includes the elements of customer satisfaction and retention. Using customer satisfaction, retention and recommendations can be determined customer loyalty score. Thus, customer loyalty needs managerial handling.

Griffin (2009:5) mentions that two important conditions related to customer loyalty are customer retention, the length of the relationship with the customer and the total customer share, indicating the percentage of the customer budget spent on the enterprise. Griffin further explains the relationship of loyalty and purchasing cycle described as follows:

**Figure 2. Purchase Cycle**



Source: Griffin (2009:18)

The order of awareness of the product, purchase, post-purchase evaluation and repurchase decision then repurchase and repeat several times and even hundreds of times so as to establish customer relationships with the company and its products / services. The stronger relationship will make the greater the loyalty.

The process from prospective customers to loyal customers requires stages and a long time. By recognizing each stage, companies have a greater chance of turning buyers into loyal customers. These stages, according to Griffin (2009: 35) are: suspect, prospect, disqualification prospect, first-time customers, repeat customers, clients, advocates, customers lost.

From the above expert review, the description of customer loyalty is a relatively permanent behavior of customer fanaticism in the long run of a goods / services on the company that the choice, do not want to switch to another company, and even influence other parties to participate in using goods or services of the company. The dimensions of customer loyalty cite Griffin's opinion (2009:31): (1) buying regularly, (2) cross buying between lines of products and services, (3) show immunity to the pull of competitors, and (4) refer to other colleagues.

In the previous 20 studies that as references, indicates that product, service and price variables generally have a positive influence on customer loyalty. Thus, based on literature review and previous research can be strongly assumed that product differentiation, service differentiation and price perception have a significant influence on PT Nardev customer loyalty. The higher differentiation of products and services and the higher the price perception will make the higher the customer loyalty.

## RESEARCH METHODOLOGY

The type of this study is quantitative research with descriptive conclusive design, which is to describe the problem of customer loyalty of PT Nardev related to the influence of product differentiation, service differentiation and price perception. The independent variables are

product differentiation, service differentiation and price perception, while the dependent variable is customer loyalty.

The population of this study is all customers of Chemical Cosmetics Division of PT Nardev which are 268 cosmetics manufacturers in 2016. Factually customers are concentrated in 2 major cities: Jakarta and its surrounding areas served by PT Nardev Jakarta office (80% sales contribution) and Surabaya and its surrounding are served from PT Nardev Surabaya branch (sales contribution 20%).

Samples were selected by probability sampling with proportionate stratified random sampling technique. In determining the number of samples, the researcher used the guidance of determining the number of samples by Roscoe (Sugiyono, 2007:129), so the sample number is determined 75 customers. In accordance with the sampling technique used, it is randomly selected by drawing as many as 60 customers from the Jakarta office and 15 customers from the Surabaya office.

Primary data in this study is obtained by instrument research. Secondary data is obtained indirectly in the form of documents from companies or other parties related to the object of research to support the primary data. Data collection techniques is using questionnaires submitted to the respondents who are the leaders of the company or the persons who are the representative of company (from the purchasing and / or R&D). In the implementation, the researcher took data from the respondents directly and through the trained team. After collected and tabulated, the data then analyzed descriptive. Descriptive analysis of each variable aims to measure customer ratings of PT Nardev with index analysis techniques and to interpret customer perceptions of each variable using the three box method criteria. Hypothesis testing is done by multiple linier regression analysis using F test and t test with SPSS 23.0 software program.

Before being used to retrieve data, research instruments need to be tested for validity and reliability against 30 respondents excluded the samples. Validity test of questionnaire items is using Pearson correlation analysis. Reliability test used is with Cronbach Alpha Coeffisien.

The data collected from the questionnaire, then tested by the classical assumption test regression: residual normality, multicollinearity and heteroscedasticity. Determination analysis is used to determine the percentage of contribution of all independent variables to the dependent variable. Correlation analysis is used to assess the level of relationship between independent variables to the dependent variable and the relationship between dimensions. Interpretation guidelines of the relationship is using correlation interpretation guidelines by Sugiyono (2007: 250).

## FINDINGS/RESULTS

The research instrument test was conducted on 30 respondents showing valid instrument. The intrument reliability test of each variable can be seen in table 3, all Cronbach's Alpha values are positive and acceptable / good reliability categories.

**Table 3. Reliability Test**

Variable	Cronbach's Alpha	Reliability
Product Differentiation	0,789	Acceptable
Service Differentiation	0,878	Good
Price Perception	0,766	Acceptable
Customer Loyalty	0,817	Good

Source: Processed data (2017)

The characteristic data of PT Nardev’s customers are showing their background, presented in Figures 3 and 4. Based on the size of the company, it can be seen in figure 3, mostly PT Nardev's customers are medium category companies (46.7%) followed by large companies (34.7%), the rest are small companies and home industries. With this conditions, PT Nardev is acceptable and playing as a major supplier in the cosmetics industry in Indonesia.

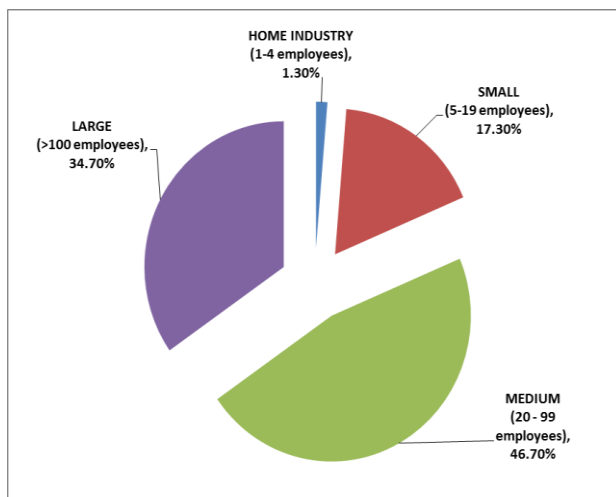


Figure 3. Customer Character Based on Category of Company Size

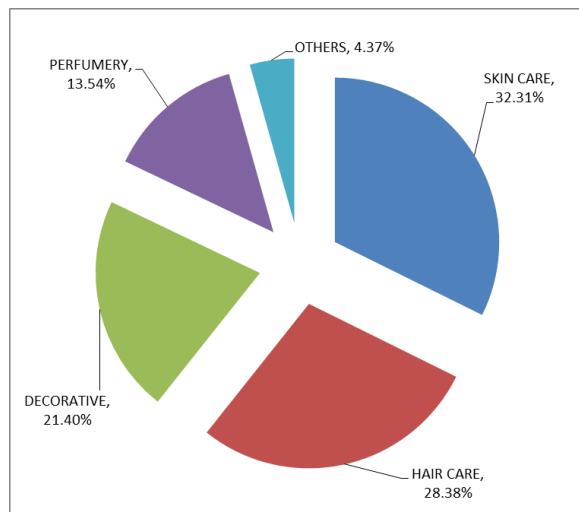


Figure 4. Product Types that Produced by the Customer

Source: Processed data (2017)

Based on the type of product produced by the customers, it can be seen in figure 4, the products are mostly skin care (32.31%), followed by hair care, decorative and perfumery. From this study also revealed that there are 4.37% in others category like food & beverage, house hold and drugs. Thus, for the product development on forward, PT Nardev should more focus on raw materials for skin care products. However, it should pay attention to the development and trend of cosmetic products in end user such as decorative product i.e. lip cream, hair color and hair bleaching products.

Descriptive analysis of each research variables conducted to obtain a picture of respondents' perceptions of each research variables. The analysis is done by index analysis technique and to interpret the customer perception to each variable using three box method criteria result as follows.

Table 4. Descriptive Analysis of Product Differentiation Variables

Variable	Dimension	Item	Strongly disagree	Disagree	Doubt	Agree	Strongly Agree	Index Item	Index Dimension
Product Differentiation	Form	1		2	10	42	21	61.40	58.10
		2	1	5	22	38	9	54.80	
	Customization	3			15	51	9	58.80	56.47
		4		5	14	44	12	57.60	
		5	1	6	24	40	4	53.00	
	Performance Quality	6		1	14	47	13	59.40	59.40
	Conformance Quality	7		2	13	42	18	60.20	59.73
		8		1	13	44	17	60.40	
		9		3	13	47	12	58.60	
	Reliable	10		2	14	46	13	59.00	60.10
		11		2	14	35	24	61.20	
<b>Average</b>									<b>58.58</b>



Product differentiation variables consist of 5 dimensions, namely form, customization, quality performance, quality of conformity and reliability. Summary calculation index is as listed in table 4. Data in the table shows that the index of product differentiation variables of 58.58 which means the customer rating of this variable is high. This is in accordance with pre-survey data that PT Nardev's product differentiation is high. The dimensions that get the highest rating on this variable is "reliability" and the lowest is "customization". Thus if PT Nardev will further improve the product differentiation strategy, need to get attention is in the matter of customization.

Service differentiation variables consist of 4 dimensions: ease of order, delivery, training and customer consultation. Summary index is as in table 5. Data in the table shows that, the index of service differentiation variables of 55.5 which means the customer rating of this variable is high, but this is at the bottom of this level. The dimension that gets the highest rating on this variable is "ease of order" and the lowest is "customer consultation". Thus, if PT Nardev will further improve the service differentiation strategy, then needs to improve customer consultation.

**Table 5. Descriptive Analysis of Service Differentiation Variables**

Variable	Dimension	Item	Strongly disagree	Disagree	Doubt	Agree	Strongly Agree	Index Item	Index Dimension
Service Differentiation	Ease of Order	12			10	39	26	63.20	58.40
		13		2	14	46	13	59.00	
		14	1	11	22	29	12	53.00	
	Delivery	15	1	5	27	30	12	54.40	55.73
		16		4	16	42	13	57.80	
		17		6	21	40	8	55.00	
	Training	18		7	18	38	12	56.00	55.80
		19		9	19	32	15	55.60	
	Consultation	20		17	20	29	9	51.00	53.00
		21		12	22	32	9	52.60	
		22		12	24	34	5	51.40	
		23		5	18	39	13	57.00	
<b>Average</b>									<b>55.50</b>

Source: processed data (2017)

**Table 6. Descriptive Analysis of Price Perception Variables**

Variable	Dimension	Item	Strongly disagree	Disagree	Doubt	Agree	Strongly Agree	Index Item	Index Dimension
Persepsi Harga	Affordable	24		2	15	47	11	58.40	55.93
		25		3	18	47	7	56.60	
		26	3	9	18	36	9	52.80	
	Lower than competitor	27		9	38	25	3	49.40	52.05
		28		8	26	32	9	53.40	
		29	1	9	23	33	9	53.00	
Fulfill benefit	30		5	31	36	3	52.40	55.20	
	31		10	18	36	11	54.60		
	32		6	20	38	11	55.80		
<b>Average</b>									<b>54.16</b>

Source: processed data (2017)

Price perception variables consist of 3 dimensions: affordable, lower than competitors and according to benefits. Summary calculation index is as in table 6. Data in the table shows

that, the price perceptual variable index of 54.16, which means the assessment of customers to this variable is moderate. The dimension that gets the highest rating on this variable is “affordable” and the lowest is “lower than the competitor”. This data is like pre-survey data stating PT Nardev's prices are higher than competitors. Thus PT Nardev needs to improve its pricing strategy, especially in making customer perceptions "lower than competitors".

Customer loyalty variables consist of 4 dimensions: repeat order, purchase between lines, immune from competitors, and provide references to others. Summary calculation index is as in table 7. Data in the table shows that, customer loyalty variable index of 54.87, which means customer ratings of this variable is moderate. The dimension that gets the highest rating on this variable is "reference" and the lowest is "immune from competitors". Thus PT Nardev needs to improve its strategy to increase its customer loyalty, especially in making customers "more immune from competitors' seduction".

**Table 7. Descriptive Analysis of Customer Loyalty Variables**

Variable	Dimension	Item	Strongly disagree	Disagree	Doubt	Agree	Strongly Agree	Index Item	Index Dimension
Customer Loyalty	Repeat order	34		1	14	51	9	58.60	57.80
		35		2	16	45	12	58.40	
		36		2	22	43	8	56.40	
	Cross buying between the line	37		1	16	49	9	58.20	54.60
		38		4	22	43	6	55.20	
		39	1	9	31	30	4	50.40	
	Immune from competitor	40		16	21	32	6	50.60	49.93
		41		10	33	23	9	51.20	
		42		16	33	21	5	48.00	
	Reference to others	43		1	13	53	8	58.60	58.30
		44		2	16	47	10	58.00	
	<b>Average</b>								<b>54.87</b>

Source: Processed data (2017)

The Classic Assumption Regression Test, showing normal distributed data, free from symptoms of multicollinearity and no heteroscedasticity problem. The normality test used is Kolmogorov - Smirnov method and the normal p-plot curve data distribution. The results show that Asymp. Sig. (2-tailed) is 0.200 which means > 0.05, it means the data is normally distributed. In addition, the p-plot curve showing the distribution of research data is along the diagonal line and not away. Thus, the distribution of data is considered normal and feasible to be used for further analysis.

The multicollinearity test used is to see the Tolerance and Variance Inflation Factor (VIF) values in the regression model, to test whether the regression model found any linear correlation between the independent variables. The result is the VIF value for all variables is less than 10 and the tolerance value is more than 0.1. So the whole variable is free from symptoms of multicollinearity.

Heteroskedasticity test using Spearsman's Rho correlation method, that is correlate independent variable with its residual. The correlations of 3 free variables with unstandardized residuals are 0.696, 0.964 and 0.838 or higher than 0.05. Thus the regression model does not occur to heteroskedastisitas problem. In addition to the method of viewing the graph (pattern of points on the regression graph) it can be seen that the points do not form a clear pattern and spread above and below the number 0 on the Y axis. So it can be concluded that there is no problem of heteroskedastisitas on the regression model .

To assess partial relationship between independent variables with dependent variable, then the correlation is tested by using SPSS 23. The results as in table 7.

**Table 7. The Partial Correlation Between Independent and Dependent Variables**

Variable	R	Relationship Level
Product Differentiation	0,690	Strong
Service Differentiation	0,661	Strong
Price Perception	0,539	Moderate

Source: Data processed from SPSS 23.0 (2017)

Thus all independent variables partially have a positive relationship (with intense strong and moderate) with the dependent variable. In addition, the correlation measurement results of all independent variables simultaneously to the dependent variable, it can be seen that  $R = 0.771$ , then all independent variables simultaneously have a strong relationship with the dependent variable. The multiple regression analysis is to know how far influence of independent variables to dependent variable is. Multiple regression coefficient value obtained from calculation by using program SPSS 23 and got result as in table 8.

**Table 8. Summary of Multiple Linear Regression Test**

Model	B	T	F	Sig
Constant	0.125	0.339		0.735
Product Differentiation	0.459	4.050		0.000
Service Differentiation	0.286	3.534		0.001
Price Perception	0.186	1.902		0.061
R Square (adjusted)	0.578			
F count			34.799	0.000

Source: data processed from SPSS 23.0 (2017)

Based on the results of the data processing above, the multiple linear regression equation is:  $Y = 0.125 + 0.459 X_1 + 0.286 X_2 + 0.186 X_3$ , where  $Y$  = customer loyalty, 0.125 = constant,  $X_1$  = product differentiation,  $X_2$  = service differentiation,  $X_3$  = perception price. This equation is to predict the value of customer loyalty ( $Y$ ) based on regression coefficient values of variables  $X_1$ ,  $X_2$  and  $X_3$

The F test or Anova test aims to determine the effect of simultaneously independent variables to the dependent variable. Fcount value is obtained by using SPSS 23.0 software, then it will be compared with Ftable value. The calculation result F as shown in table 8 above is 34,779. While the Ftable value is sought at the level of  $\alpha = 0.05$ ,  $df_1$  (numerator) = 3 and  $df_2$  (denominator) = 71, it will get Ftable value of 2.734. Level of significance = 0.000 (smaller than 0.05). With such  $F_{count} > F_{table}$  is  $34.799 > 2.734$ , so the hypothesis  $H_4$  is accepted. Thus it can be concluded that product differentiation, service differentiation and price perception simultaneously have a positive and significant influence on customer loyalty.

The t test aims to determine the effect of each independent variable on the dependent variable. The value of t arithmetic is obtained by using software SPSS 23.0 then compared with t table. t count can be seen in table 8. Ttable value at the level of significance  $0.05 / 2 = 0.025$  and  $df = 71$ , then  $t_{table} = 1.994$ . In variable of product differentiation, t count = 4,050 then  $t_{count} > t_{table}$  and significance  $0,000 < 0,05$ , hence hypothesis  $H_1$  is accepted. Thus it

can be concluded that product differentiation **has** a positive and significant influence on customer loyalty. In service differentiation variables,  $t_{count} = 3,534$ ; Then  $t_{count} > t_{table}$  and significance  $0.001 < 0.05$ , then hypothesis H2 is accepted. Thus it can be concluded service differentiation has a positive and significant impact on customer loyalty. In the variable price perception  $t_{count} = 1.905$  then  $t_{count} < t_{table}$  and the significance of  $0.061 > 0.05$ , then the hypothesis H3 is rejected. Thus it can be concluded that the price perception does not have influence on customer loyalty.

Analysis of determination shows that adjusted R square is 0.578, means the coefficient of determination = 57.8%. Thus the contribution of the effect of product differentiation, service differentiation and price perceptions on customer loyalty is 57.8%, while the rest (42.2%), influenced by other variables that is not examined in this study.

The correlation analysis shows that the correlation coefficient of dimensions on independent variables with dimensions on dependent variable is positive. This means that there is a positive linear relationship: the higher dimension value of the independent variable, will make higher dimension value in the dependent variable. In product differentiation variables, the strongest relationship is between the "form" dimension and the "immune from competitor". In service differentiation variable, the strongest relationship is between the dimension of "ease of order" with "immune from competitor". In the variable of price perception, the strongest relation is between the dimension of "price as benefit" and "cross buying between lines of products".

Based on the results of this study, PT Nardev must pay attention to product differentiation strategy especially related to the form and uniqueness according to customer requirement. This is in the line with the results of previous studies by Freja (2006), Euphemia (2010), Pristiyono (2012), Achir (2012), and Cahyanta (2013) stating that product factor has positive and significant influence on customer loyalty.

In addition, PT Nardev must also pay attention to the service differentiation strategy, especially related to increasing the channel order, confirm the order and remind customers to do repeat order. This is in line with the results of previous research by Robinson (2002), Freja (2006), Euphemia (2010), Lo Liang (2010), Joseph (2010), Pristiyono (2012), Achir (2012), Syafriwal (2012), Hasan (2013), Cahyanta (2013), Neringa (2014), Faizin (2014), Muhammad Rizan (2014), Ernest (2015), Mudassir (2015), Bricci (2016), Sheroog (2016), Le Giang (2017), and Selvarajah (2017) stating that service factor has positive and significant influence on customer loyalty.

Also to be noticed is the interesting finding that price perception has no significant influence on customer loyalty. It is understandable that PT Nardev's customers are industrial customers who are concerned to product quality and service factors. The price has been determined by the R&D department at the beginning of the project before real production. On the other hand, raw material suppliers are usually able to determine which products can be accepted by certain customers. Therefore PT Nardev must be keen to offer products whose prices are acceptable to customers according to their segment. PT Nardev also do not too worry in case should be price adjustment due to factors from principal, shipment through the air, the problem of USD exchange rate and other factors. The results of this study are not in line with Joseph (2010), Anuwichanont (2011), Syafriwal (2012) and Hasan (2013) which states that price perceptions significantly influence customer loyalty. This mismatch is due to the problem being studied is consumer products and services. Nevertheless, this research is in the line with Faizin's (2014) study which concludes that price perception has no significant influence on customer loyalty.

Simultaneously product differentiation, service differentiation and price perception have positive and significant influence on customer loyalty. Thus the three independent variables when done together are very important in improving customer loyalty. PT Nardev management must take the marketing mix strategy, which is to increase customer loyalty by combining strategy of product differentiation, service differentiation and price perception. The main priority is on product differentiation, then service differentiation and subsequent perception of prices. If due to a condition of having to choose one of these three things partially, then the product differentiation strategy should take precedence. Since PT Nardev does not produce by themselves, it is absolutely necessary to do very close cooperation with the principal in producing products that are in demand and become a trend in the cosmetics industry in Indonesia. If necessary, PT Nardev should be able to produce the product itself or mix some raw materials into semi-finished goods. With this strategy, it is expected that PT Nardev's customer loyalty will increase and sharp sales growth fluctuations and downward trend of sales can be anticipated.

Compared to the previous studies that were used as references, there are 4 different studies (gaps), by: Joseph (2010), Syafriwal (2012), Hasan (2013) and Anuwichanont (2011). The existence of this gap is different object of study. Joseph's mobile phone, Hasan's is communication sector, Syafriwal's is hotel customers while Anuwichanont's flight services. The object of these 4 studies is services and consumer's goods, so it differs from industry marketing. The studies that have object of customer loyalty on industrial chemical raw materials market, by Robinson and Freja, the results is in the line to this study.

## **DISCUSSIONS AND CONCLUSIONS**

Based on above findings, it may be concluded:

1. Product differentiation has positive and significant influence on customer loyalty of PT Nardev,
2. Service differentiation has positive and significant influence on customer loyalty,
3. Price perception has no influence to loyalty PT Nardev's customers,
4. Product differentiation, service differentiation and price perception simultaneously have a positive and significant impact on PT Nardev customer loyalty.

The suggestions are as follows:

1. Considering more than 70% of customers are medium and large companies, PT Nardev needs to maintain this position.
2. PT Nardev focuses more on developing cosmetic raw materials for skin care applications, as more than 30% of products are skin care.
3. PT Nardev needs to maintain and improve product differentiation strategy, because from the respondent's assessment, this variable gets the highest rating among other variables.
4. PT Nardev needs to do marketing mix strategy by combining product differentiation strategy, service differentiation and price perception.
5. Need further research to know other variables that influence PT Nardev customer loyalty such as promotion variable, distribution (supply chain) and other factors in end user.
6. From the academic side, Mercuru Buana University needs to be more direct the students to research marketing industry because it is still rare and has distinct characteristic compared to consumer goods marketing.

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