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# Endorsement Credibility Model for Consumer Loyalty using Partial Least Square Approach

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**Abstract:** The celebrity endorsements in the digital era has an important role in promotion of brand image of products to consumer. The research aims to design endorsement credibility model related to consumer loyalty for cosmetic products in Indonesia. The model is constructed using partial least square approach to determine the relationship between seven variables, that is trustworthiness, expertise, attractiveness of endorser, suitability of endorser and products, attractiveness of advertisement, brand image, and consumer loyalty. By using celebrity endorsement for cosmetic products X, the research derived two models,the first is the model of endorsement on attractiveness of advertisements explained by trustworthiness and the suitability of endorsers and products, and the second is the model consumer loyalty explained by brand image and attractiveness of advertisement. Based on the model, attractiveness of endorser and suitability of endorser and products have significant relationship to consumer loyalty through the attractiveness of advertisement, while trustworthiness on endorser and expertise of endorser did not have a significant relationship to consumer loyalty through the attractiveness of advertisement. Brand image and attractiveness of advertisement have significant relationship to consumer loyalty.

**Keywords:** Brand Image; Consumer Loyalty; Model of Endorsement Credibility; Partial Least Square

## I. INTRODUCTION

Information and digital technological developments have an impact on marketing strategies so the company raises new media to market its products, namely through social media or other internet media [1]. The Indonesian Internet Service Provider Association has announced the results of survey of penetration and behavior of Indonesian internet users in 2017, that Indonesia experienced tremendous growth in internet users. Currently the number of internet users in Indonesia reaches 143.26 million users (54.68% of total population). With the development of internet media and social media such as YouTube, facebook, twitter, plurk and others, it becomes an opportunity for marketers to market their products more broadly. Promotion through social media will be the right media because more and more people spend time on the social media [1]. With the development of the market through the internet, business owners must turn their minds so that their products can be known and bought by many people. One of the promotion techniques that are developing is endorsement.

The development of internet technology has an impact on all aspects of human life, one of them is business development. Business development led to increase product diversity and market competition. Market competition requires companies to maintain and even increase the company's consumer loyalty. The factors that influence consumer loyalty are the attractiveness of advertisement, brand reputation, and product quality [2]. Consumer loyalty can be improved by improving brand image and making advertisements more attractive to public [3].

One of the ways to increase the attractiveness of advertisement for a product is celebrity endorsement. Business owners give products to celebrities, then celebrities used the products, reviewed and promoted on their social media. When the product is promoted by celebrities who generally have many followers, the more will know the product. The credibility of celebrities who advertise a product influences the attractiveness of the advertisements [4]. However, celebrity endorsement does not guarantee the success in marketing promotions. Although consumers have a good response to celebrity endorsement, it is necessary to learn how do credibility of celebrity endorsement and brand image influencing consumer loyalty [3].

Therefore, it is necessary to do a research on relationship of credibility endorsement and brand image to consumer loyalty. The conclusions from the research will help companies to understand the causal effects of celebrity support in advertisement and brand image on consumer loyalty [3]. So, a framework is needed to summarize the effects of the various variables mentioned above to increase consumer loyalty, and to develop an understanding of customer perceptions about celebrity support in Indonesia. Therefore, the purpose of the research is to examine the effect of endorsement credibility and brand image on consumer loyalty.

Relationship analysis in statistics can use the Structural Equation Modeling (SEM) method. The method of SEM is used to test simultaneously a relationship formed from one or more independent variables

with one or more non-independent variables. Research based on covariance such as SEM is influenced by parametric assumptions such as observed variables having multivariate normal distribution and observations must be independent of each other, because SEM is a parametric method. As an alternative non-parametric method that is used to test the relationship of independent variables with non-free variables is Partial Least Square (PLS).

PLS is a SEM alternative approach that is not based on some multivariate normal assumptions because PLS is a non-parametric method [5]. PLS is used to simultaneously test relationships between variables in linear and non-linear relationships. In addition PLS can build a model where the model will be tested to determine the relationship between latent variables. Latent variables are variables that cannot be measured by direct observation, so that it requires indicators that represent these variables. Based on the research, we use PLS because it has several advantages including not requiring distribution assumptions, being able to analyze research models with complex paths, and not requiring large sample sizes. The aim of research is to design endorsement credibility model related to consumer loyalty for cosmetic products in Indonesia. The model is constructed using partial least square approach.

## II. LITERATURE REVIEW

### 2.1. Attractiveness of advertisement

The attractiveness of advertising is the delivery of messages about products using several approaches to attract consumers [6]. Advertising attractiveness is any form of presentation and promotion of ideas, goods or services nonpersonally by a particular sponsor that requires payment. The attractiveness of advertising is something that moves people, talks about their wants or needs and arouses interest. The attractiveness of advertising is a supporting tool in promotional programs, therefore the attractiveness of advertising is needed so that the message delivered has the desired impact on advertisers.

The attractiveness of different advertisements can be used as a basis for advertising messages, generally divided into two categories: rational and emotional attraction as part of creative strategies. Advertisers also consider rational and emotional can be combined in developing advertising messages can be described as following :

**a. Rational Attraction.**

The rational attraction is informative, focusing on the practical, functional or utilitarian needs of the target audience, emphasizing the features, benefits, and reasons for owning or using a particular product brand or method. Rational attraction tends to be informative, and advertisers use it in order to convince the target audience that the product or service advertised has certain attributes or provides special benefits that can meet their needs. Some of the attractions included in the category of rational attraction include features, excellence, price, news, and the popularity of products or services.

**b. Emotional Attraction.**

Emotional attraction is related to the social needs and or psychological goals of the target audience. Advertisers use emotional appeal with the aim that the positive feelings of the target audience can be transferred to the brand and to influence the interpretation of the target audience from the experience of using a particular product or service. Research shows that the positive feelings created by advertisements can have a powerful effect on brands. Some of the attractions included in the category of emotional attraction include comfort, fear, love, happiness, nostalgia.

**c. Rational and Emotional Attractiveness.**

Target audience purchasing decisions are often based on both emotional and rational motives, and do not rule out the possibility of developing effective advertising advertising messages are made using rational and emotional appeal. Purchasing decisions regarding services can also be based on both rational and emotional motives.

To approach consumers and to have messages easily accepted, appeals must also be used [7]. The attraction used in advertising messages must have three characteristics:

a. Attractiveness is meaningful, which shows the benefits that make consumers prefer or are more interested in the product.
b. The attraction must be distinctive, must state what makes the product better than competitors' products.
c. The message of the ad must be trustworthy, which is to show the truth of the advertisement about the product displayed.

**2.2. Celebrity endorsement**

Celebrity endorsement is a marketing strategy where celebrities use their fame to advertise or promote products to consumers, or acts as a communicator of a particular product or brand [8]. Using people as an object in advertisement is effective because it can provoke emotional and reactionary attitudes. Handsome or attractive people are highly recommended to be endorsed by advertisers [9]. But in every marketing strategy, there are some risks that should be prevented. One of the biggest fears of hiring celebrities is the risk of bad publicity from these celebrities. Therefore, if celebrity endorsement is not properly managed, it can endanger the company itself. So it takes a celebrity who has good credibility to provide a good image of a product from the company to consumers. [9] concluded that the source of credibility is a condition that is commonly used to apply positive characters from communicators that influence the reception of information by the recipient. The following we describe credibility of endorsement was measured by several indicators [10].

**a. Trustworthiness.**

Trustworthiness is defined as a level of consumer confidence in communicator in communicating statements about products. With the following indicators:celebrity is trustworthy, celebrity is reliable, celebrity is dependable, celebrity is honest.

**b. Expertise**

Expertise is defined as the extent to which the communicator is considered as a source of legitimate statements. Subjects who have higher expertise show more supporters than subjects with low expertise. In a sales system, an expert seller will have many consumers than who are not experts with the following indicators: celebrity is experted in their fields, celebrity is experienced in their fields, celebrity is knowledgeable in their fields, celebrity is qualified, celebrity is skilled in their fields.

**c. Attractiveness**

Endorser attractiveness is an interesting thing about endorsers, including characteristics that can be seen in endorsers such as physical attractiveness, personality traits, lifestyle, social class, gender, age group, and so on. Attractive (versus non-attractive) endorsers are consistently preferred and have a positive impact on the products that they associated[10], with the following indicators: celebrity is attractive, celebrity is classy, celebrity is good looking, celebrity is stylish.

**d. Suitability of endorser and the products**

The memory of a brand will be higher if there is a match between endorsers and brands [9]. This suitability shows symbolically the compatibility between endorsers and brands with the following indicators:it makes sense that this celebrity endorse this product, the image between the endorser and the endorsed product are connected, the image between the endorser and the endorsed product are related, there is a logical connection between endorser and endorsed product.

**2.3. Brand Image**

Brand image is a vision and trust that is hidden in the minds of consumers as a reflection of the association in consumers' memories. Brand image consists of two main factors, the first is physical factors include design, packaging, logo, brand name, function, and product use of the brand. The second is psychological factors, formed by emotions, beliefs that are considered by consumers can describe the product of the brand.Brand image have the following indicators:brand's product is known to the public, products with the brand has a good reputation, products with the brand has a good quality, products with the brand has been used by many people [3].

**2.4. Consumer loyalty**

Customers who are loyal to the brand of a product tend to be bound and accustomed to buy the same product repeatedly even though there are many similar products. The longer the customer loyalty, the greater the profit gained by the company. Increased loyalty can save company costs in the following:

a. Marketing costs are reduced, because the cost of attracting new customers is higher than maintaining old customers.
b. Transaction costs are lower, such as the cost of negotiating contracts and ordering processes.
c. Customer turnover costs are reduced because fewer lost customers are replaced.
d. The success of cross sales is increasing, causing a greater market share.
e. Word of mouth becomes more positive, assuming loyal and satisfied customers.
f. Failure costs are reduced, such as reduction in reworking, warranty, replacement costs, and so on.

Consumer loyalty have the following indicators: will buy back products with the same brand, products can be trusted, recommend products to the closest people, not interested in other products that resemble.

**2.5. Partialleast square**

Partial Least Square (PLS) is an alternative method of Structural Equation Modeling (SEM) which is used to test the relationship between latent variables in linear or non-linear form. SEM is influenced by parametric assumptions such as observed variables having multivariate normal distribution and observations must be independent of each other, because SEM is a parametric method. As an alternative non-parametric method that is used to test the relationship of independent variables with dependent variables is PLS. PLS is a non-parametric method [5].

PLS is used to test the relationships between variables in linear and non-linear relationships. In addition, PLS can build a model where the model will be tested to determine the relationship between latent variables. Latent variables are variables that cannot be measured by direct observation, so that it requires indicators that represent these variables. PLS has several advantages, including not requiring distribution assumptions, being able to analyze research models with complex paths, and not requiring large sample sizes.

The Partial Least Square have analysis step, the first is constructing the path diagram to make PLS model specification such as measurement models and structural models. The measurement model in the research is reflexive in that indicators are seen as the effects of observable latent variables. General equations Reflective can be expressed as:

$X_{jk} = \lambda_{jk}\xi_j + \delta_{jk}$ (Exogenous Reflective)
$Y_{jk} = \lambda_{jk}\eta_j + \varepsilon_{jk}$ (Endogenous Reflective)

where $X_{jk}$ is an indicator vector for exogenous variables ($\xi$), $Y_{jk}$ is an indicator vector for endogenous variables ($\eta$), with j is an index for latent variables and k is an index for indicators of latent variables. While $\lambda_{jk}$ is a loading coefficient that describes simple regression coefficient that connects latent variables and indicators, $\delta_{jk}$ is a measurement error vector for exogenous variables, $\varepsilon_{jk}$is a measurement error vector for endogenous variables. General equations for structural model can be expressed by:

$$\eta_j = \sum_{k=1}^{k_i} \gamma_{jk}\,\xi_j + \sum_{i=1}^{i_i} \beta_{ji}\,\eta_i$$

where $\gamma_{jk}$ and$\beta_{ji}$ are the structural model path coefficient,

After spesification models, then estimating the value of latent variables, path coefficients for measurement models and structural models. Then evaluating measurement models with reflective relationships include:

a. Indicator reliability test: The relationship coefficient of each indicator to the latent variable is reliable if the outer loading value of the indicator must be more than 0.6 [5].
b. Composite reliability: The composite reliability value in PLS is used to measure the consistency of the indicator blocks in the reflective measurement model. High composite reliability values indicate high consistency of the indicator block in measuring latent variables. Recommended reliability composite values> 0.60 [11].
c. Convergence Validity: in estimating latent variables, there is an outer weight convergence check. If the outer weight is convergent, then the outer weight must be tested for validity. Outer weight convergence is valid if value of Average Variance Extracted (AVE) must be more than 0.50 [5].
d. Discriminant validity can be tested by cross-loading value between the indicator and the latent variable. An indicator is valid if it has a correlation between indicators with latent variables is the highest compared to other variables [5].

After had a valid measurement model, then is evaluating the structural model. Evaluating structural model using multicollinearity test, valid if the VIF value is smaller than 0.5 . Then the parameter significance test, valid if t-statistics of the path coefficient is greater than 1.96, where t-statistics is obtained from the process bootstrapping [11]. If it is not fulfilled, the invalid model is trimmed. Trimming theory is a method used to improve the path analysis model by eliminating insignificant coefficients and not fulfilling the criteria. In PLS the Trimming theory is used if the evaluation model is not met, both the measurement model and the structural model. Trimming for the measurement model according to [11] is determined through outer loading. If the indicator has an outer loading value of less than 0.40 then the indicator must be deleted. If the value of outer loading is between 0.4 and 0.7, it must be analyzed first whether the removal of indicators affects the AVE value and composite reliability. If you add the AVE value and composite reliability, the indicator can be deleted, but if the AVE value and composite reliability do not increase, the indicator can be maintained. Trimming theory for structural models can be done by removing variables that are not significant in testing relationships.

The model is evaluated until all validation tests are obstructed so that the best model is obtained to test the hypothesis.

**2.5. Model theoritical and hypothesis**

In increasing consumer appeal to advertising, one component of the credibility an endorser must have is trustworthiness. With the element of consumer trust in the endorser, it will facilitate the endorser in communicating the message of the product so that consumers can trust the message given by the endorser. In general, when consumers trust the endorser, opinions from other people will be ignored. Trust as a consumer's perception of the honesty, integrity and trust of an endorser. Trust is a manifestation attribute that underlies the source credibility that affects attitude changes in consumers. Celebrities will be considered more trusted than non-celebrities. Therefore, consumer trust in an endorser will have an influence in attracting consumers' attention to advertisements promoted by endorsers [9].

An endorser who has special expertise has a special attraction for consumers. According to [12], expertise in endorser credibility refers to knowledge, experience, and skills related to the advertised brand. Research on source expertise has shown that the perceived expertise of a celebrity can cause a change in positive attitudes. [9] say that using an expert spokesperson as an endorser is important for products and services that have higher physical, financial or performance risks. For low risk products and services, testimonials from a consumer are considered sufficient to create a favorable response.

In increasing consumer attractiveness towards advertising, one of the factors needed for endorsers' credibility is attractiveness because physical attraction is the first thing seen to give a positive impression on the advertisement of a product or brand. Characteristically, the attractiveness of a source can be defined as the attractive nature of endorsers, such as physical beauty, personality, familiarity with consumers, preferred by consumers [8]. In a study it was stated that the attractiveness of an endorser had a positive influence on the attractiveness of advertising [13]. According to [14] states that by using the attraction of endorsers it will make consumers more motivated. This shows that attractiveness is an important factor in influencing consumer attitudes towards advertising.

The repurchase of a particular brand is much higher when there is a match between the endorser and the brand. [12] argue that, when a celebrity shares the same characteristics as a brand image, that similarity brings more trust to the endorser. Technically, the suitability represents the right pair between endorsers and brands [15]. The endorsement credibility model can be made to consumer loyalty through the attractiveness of advertisement. Criteria of credibility endorsement consist of trustworthiness, expertise, attractiveness, and suitability of endorsers and products. In addition, consumer loyalty also has a relationship with brand image. Diagram for model of endorsement credibility of consumer loyalty through the attractiveness of advertisement is shown in Fig. 1.

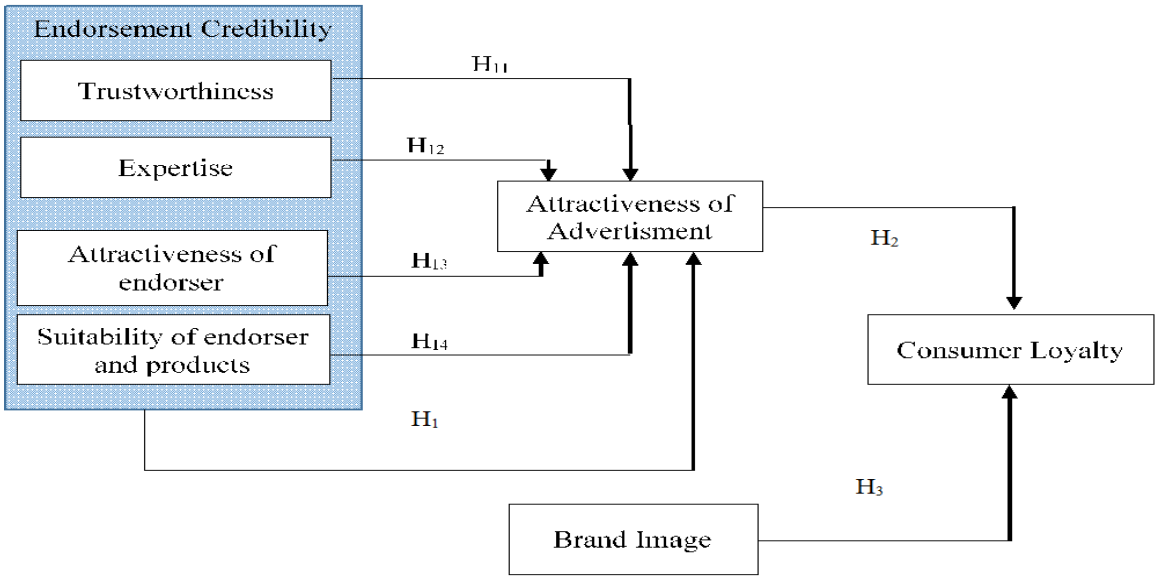


Figure 1. Diagram of endorsement credibility for consumer loyalty model

Based on Fig. 1 it can be described that relationship of endorsement credibility for consumer loyalty can be formulated as follows:

$H_1$ : Endorsement Credibility has a positive influence on attractiveness of advertisement.
$H_{11}$ : Trustworthiness to endorser has a positive influence on attractiveness of advertisement.
$H_{12}$ : Endorser's expertise has a positive influence on attractiveness of advertisement.
$H_{13}$ : Attractiveness of endorser has a positive influence on attractiveness of advertisement
$H_{14}$ : Suitability of endorser and products has a positive influence on attractiveness of advertisement.
$H_2$ : Attractiveness of advertisement has a positive influence on consumer loyalty.
$H_3$ : Brand image has a positive influence on consumer loyalty.

## III. METHODOLOGY

Observation data collected by the sampling technique is non-probability sampling, namely judgemental sampling. The criteria of respondent in the research are consumer of cosmetic product X in Indonesia, and have watched Celebrity Endorsement XX's video on some YouTube. The technique of collecting data used an online survey through the JotForm platform with link website. Data was carried out on January 20, 2019 until February 10, 2019. The size of the sample was 108 respondents with the measurement scale is an interval scale of 1 to 10. This scale sorts data from the lowest level which means strongly disagree to the highest level means strongly agree.

Analysis of the relationship between variables statistically using the Structural Equation Modeling (SEM) method. SEM is used to simultaneously test relationships formed from one or more independent variables with one or more non-independent variables. Design of models and analytical method uses non-parametric methodswith PLS approach as described in Section 2.5. The research data was processed using Microsoft Excel, SPSS 23, and Smart PLS 3.

## IV. RESULTS AND DISCUSSION

Based on observation data, respondents were aged 18-24 years with a total of 106 respondents and other respondents aged 25-31 years. Respondents who worked as students are 93 respondents, and other respondents worked as private employees, civil servants, lecturers/ teachers, and housewives. And most respondents spend a budget to buy make up products less than Rp 200,000 per month. With 29 indicators and 7 variables, diagram for path modelling formed is shown in Fig. 2.

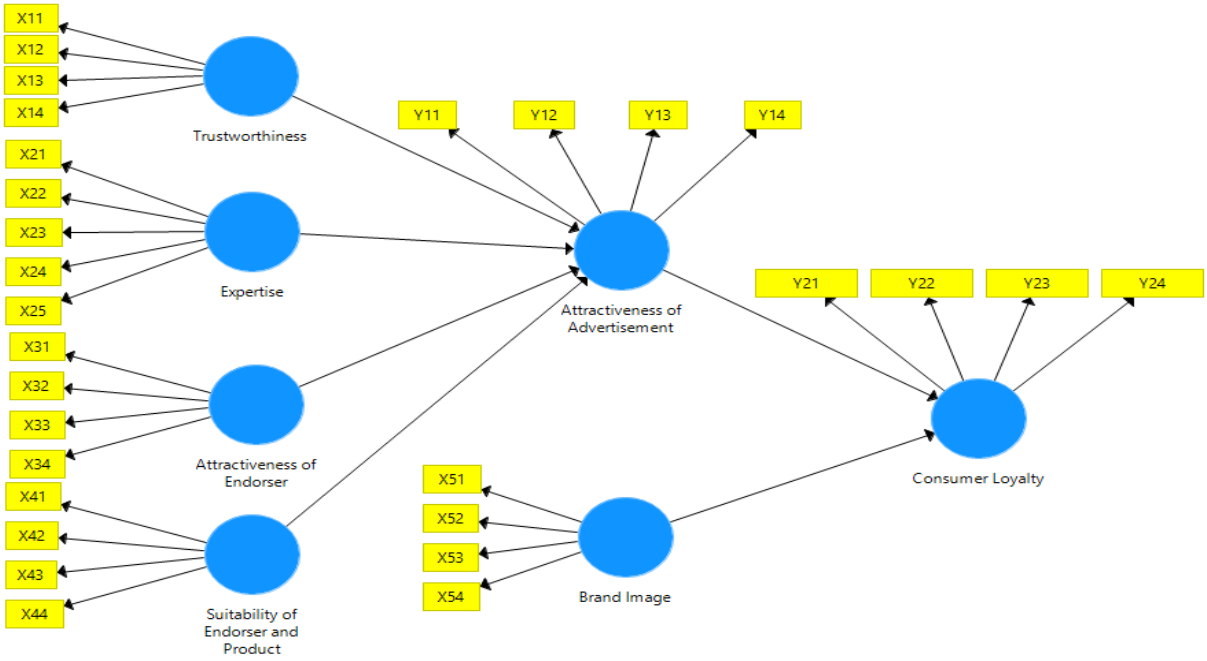


Figure 2. Diagram for path modelling

Based on Fig. 2, in the initial specifications of the PLS model, 29 measurement models will be formed according to the number of indicators in the study, and 2 structural models. In the research, the relationship built on the measurement model is reflective which is evaluated by reliability indicators, convergent validity,

discriminant validity, and composite reliability. Defined notation $X_{ij}$, where i shows the variables for model, and j shows indicators.

**4.1. Evaluation of measurement models**

The measurement models are evaluated on indicator reliability, convergent validity, discriminant validity, and composite reliability.

**a. Indicator reliability**

Based on Table 3 the value of outer loading for indicator $X_{14,}$ $Y_{11,}Y_{12,}Y_{14,}$ $Y_{21,}$ and $Y_{23}$ are not reliable because outer loading of these indicators is less than 0.6.

Table 3. Outer loading value

| Indicator | Trustworthiness ($X_1$) | Expertise ($X_2$) | Attractiveness of endorser ($X_3$) | Suitability endorser and products ($X_4$) | Brand Image ($X_5$) | Attractiveness of Advertisement ($Y_1$) | Consumer Loyalty ($Y_2$) |
|---|---|---|---|---|---|---|---|
| Indicator1 | 0.877 | 0.808 | 0.883 | 0.796 | 0.723 | **0.089** | **0.438** |
| Indicator2 | 0.910 | 0.904 | 0.872 | 0.812 | 0.937 | **0.254** | 0.922 |
| Indicator3 | 0.919 | 0.774 | 0.745 | 0.726 | 0.918 | **-0.098** | **0.327** |
| Indicator 4 | **0.102** | 0.794 | 0.842 | 0.784 | 0.784 | 0.974 | 0.609 |
| Indicator5 | | 0.875 | | | | | |

**b. Composite reliability**

Based on Table 4, the composite reliability value in Attractiveness of advertisement variable is less than 0.6. This indicates that the indicator block in the Attractiveness of advertisement variable does not have high consistency in measuring latent variables. So it can be concluded that the composite reliability test is not fulfilled.

Table 4.Composite reliability value

| Variable | *Composite reliability* |
|---|---|
| Trustworthiness | 0,836 |
| Expertise | 0,918 |
| Attractiveness of endorser | 0,903 |
| Suitability Endorser and Products | 0,861 |
| Brand Image | 0,908 |
| Attractiveness of Advertisement | 0,334 |
| Consumer Loyalty | 0,680 |

**c. Convergence validity**

Based on Table 5, the AVE value of the Attractiveness od Advertisement variable and consumer Loyalty is less than 0.5. This indicates that the outer weight of each indicator of the Attractiveness of Advertisements and Consumer Loyalty variables is invalid. Then the convergence validity test is not fulfilled.

Table 5. AVE Value

| Variable | *AVE* |
|---|---|
| Trustworthiness | 0,613 |
| Expertise | 0,693 |
| Attractiveness of endorser | 0,701 |
| Suitability Endorser and Products | 0,609 |
| Brand Image | 0,715 |
| Attractiveness of Advertisement | 0,258 |
| Consumer Loyalty | 0,380 |

**d. Discriminant validity**

Some correlation values between indicators (cross loading) with latent variables are not the highest compared to other variables. This indicates that some latent variables have not been able to predict the indicator better than other latent variables. Then it can be concluded that the test of discriminant validity is not fulfilled.

Because the validation of the measurement model has not been fully fulfilled, the model must be reconstructed by doing trimming, that is removing indicators that does not valid. The indicators that be removed to form new models are $X_{14,}$ $Y_{11,}Y_{12,}Y_{14,}$ $Y_{21,}$ and $Y_{23}$.

**4.2. Evaluation of of structural models**

The Evaluation of of structural models are evaluated on multicollinearity test, significance of variable relationships test, indicator reliability, convergent validity, discriminant validity, and composite reliability.

**a. Multicollinearity test**

Based on Table 6, the VIF value obtained from a structural model is less than 5, this indicates that there is no collaboration between latent variables so that the collinearity test is fulfilled.

A. Table 6.VIF Value

| Variable | VIF |
|---|---|
| Attractiveness of endorser -> Attractiveness of Advertisement | 1,852 |
| Attractiveness of Advertisement -> Consumer Loyalty | 1,782 |
| Expertise-> Attractiveness of Advertisement | 2,345 |
| Suitability of Endorser and products-> Attractiveness of Advertisement | 1,383 |
| Trustworthiness -> Attractiveness of Advertisement | 2,042 |
| Brand Image -> Consumer Loyalty | 1,782 |

**b. Significance of variable relationships test**

Based onTable 7, value of t-statistics on the relationship of Expertise on Attractiveness of Advertisements and the relationship Attractiveness of endorser on Attractiveness of advertisements is each less than 1.96. This indicates that the structural model is not valid because there are latent variable that is not significant.

Table 7.t-statistics Value

| Variable's Relationship | t-statistics |
|---|---|
| Trustworthiness -> Attractiveness of Advertisement | 4,314 |
| Expertise ->Attractiveness of Advertisement | 2,006 |
| Attractiveness of endorser ->Attractiveness of Advertisement | 0,114 |
| Suitability endorser and product ->Attractiveness of Advertisement | 5,087 |
| Brand Image -> Consumer Loyalty | 4,459 |
| Attractiveness of Advertisement -> Consumer Loyalty | 4,795 |

Because evaluation of structural model has not been fully fulfilled because there are still variables that have no significant effect, the model must be reconstructed by doing trimming, removing variables that are not valid. The variables that will be removed to form a new model are Expertise and Attractiveness variables.

**4.3. Final Models**

The measurement model in this study is reflexive, where indicators are seen as the effects of observable latent variables. The coefficient in the model is the loading coefficient of the measurement model obtained from the indicator correlation value with the latent variable. After the stages of PLS, the best measurement model is obtained.

The best measurement model was formed for the research, are:

Measurement model of trustworthiness:

$X_{11} = 0.873\ \xi_1 + \delta_{11}$ $X_{13} = 0.922\ \xi_1 + \delta_{13}$

$X_{12} = 0.916\xi_1 + \delta_{12}$

Measurement model of suitability endorser and product:

$X_{41} = 0.800\ \xi_4 + \delta_{41}$ $X_{43} = 0.723\ \xi_4 + \delta_{43}$

$X_{42} = 0.808\ \xi_4 + \delta_{42}$ $X_{44} = 0.783\ \xi_4 + \delta_{44}$

Measurement model of Brand image:

$X_{51} = 0.719\xi_5 + \delta_{51}$ $X_{53} = 0.919\ \xi_5 + \delta_{53}$

$X_{52} = 0.938\xi_5 + \delta_{52}$ $X_{54} = 0.786\ \xi_5 + \delta_{54}$

Measurement model of Attractiveness of Advertisement:

$Y_{14} = \eta_1 + \varepsilon_{14}$

Measurement model of Consumer Loyalty:

$Y_{22} = 0.943\,\eta_2 + \varepsilon_{22}$ $Y_{24} = 0.662\,\eta_2 + \varepsilon_{24}$

The measurement model is valid model with several tests that have been carried out. In addition, the loading coefficient for all indicators in the measurement model is significant. In addition, the loading coefficient ($\lambda_{jk}$) for all indicators in the measurement model is significant. This indicates that each simple regression coefficient that connects latent variables with their indicators has a significant effect. Or in other words, the correlation between indicators with latent variables is strong (more than 0.6). So that indicators are able to explain latent variables well.

In addition, the indicators in the measurement model have high data variations. In indicators with low data variations, it is more difficult to be used as a measure of a latent construct. Because the difference in scores of latent constructs is more difficult to explain by indicators with almost the same value (low data variation).

The best model for structural model for attractiveness of advertisements:

$\eta_1 = 0.528\,\xi_1 + 0.377\,\xi_4$

The best model for structural model for consumer loyalty:

$\eta_2 = 0.472\xi_5 + 0.344\,\eta_1$

The best prediction model for consumer loyalty can be explained well by the variable attractiveness of advertisement and brand image.

To test the hypothesis in the research, partial least method was used on the data generated to analyze the relationship between the credibility of endorsement and brand image on consumer loyalty. The hypothesis test is accepted if the value of t-statistics obtained is greater than 1.96 [11]. The results of this analysis provide answers to the hypotheses tested in the research. $H_1$ states that endorsement credibility has a positive influence on attractiveness of advertisement. Based on Table 8, direct effect of independent variables which include trustworthiness (t-statistics =4,974) and suitability endorser and product (t-statistics =4,713) has a positive influence on attractiveness of advertisements, however expertise (t-statistics = 1,891) and attractiveness of advertisement (t-statistics = 0,458) each does not have a positive influence on attractiveness of advertisement. Therefore, $H_1$ partially accepted, where $H_{11}$and $H_{14}$ accepted, while $H_{12}$ and $H_{13}$ rejected. Based on Table 10, $R^2$ value for attractiveness of advertisement is 0,614, this indicates that the attractiveness of advertisement is well explained by 61.4% by endorsement credibility variables including trustworthiness and suitability of endorser and product.

$H_2$ states that attractiveness of advertisements has a positive influence on consumer loyalty and $H_3$ states that brand image has a positive influence on consumer loyalty. Based on Table 9, direct effect of independent variables which include attractiveness of advertisement t-statistics = 4,773) and brand image (t-statistics = 2,975) have positive influence on consumer loyalty, Therefore, $H_2$ and $H_3$ accepted. Based on Table 10, the value of R2 for consumer loyalty is 0.557. This indicates that consumer loyalty is explained well by 55.7% by the attractiveness of advertisement and brand image.

Table 8.t-statistics for Relationship to Attractiveness of Advertisement

| Variable | β | t-statistics |
|---|---|---|
| Trustworthiness | 0,388 | 4,974 |
| Expertise | 0,199 | 1,891 |
| Attractiveness of Endorser | 0,039 | 0,458 |
| Suitability endorser and product | 0,346 | 4,713 |

Table 9. t-statistics for Relationship to Consumer Loyalty

| Variable | β | t-statistics |
|---|---|---|
| Brand Image | 0,472 | 2,975 |
| ttractiveness of Advertisement | 0,344 | 4,773 |

Table 10. $R^2$ Value

| Variable | Nilai $R^2$ |
|---|---|
| Attractiveness of Advertisement | 0,614 |
| Consumer loyalty | 0,557 |

Through the hypothesis testiong, information can be obtained that the attractiveness of the advertisement can be explained well by the trustworthiness to endorser and the suitability of endorser end product. Because the variables that influence the attractiveness of the advertisement after being tested for hypotheses are the trustworthiness variable and the endorser suitability variable with the endorse product. while Attractiveness of endorser and endorse's expertise do not have a significant relationship to the attractiveness of advertising.Expertise variables that do not have a significant influence on the attractiveness of advertisements indicate that the majority of respondents from the research were students who basically liked natural make up, in contrast to Celebrity Endorsement XX's expertise that always like bold make up.

In the structural equations that involve many variables and paths between variables, the direction of causality that shows hypothesized relationships must be clearly defined. In this study there are influences between variables which include direct effects, indirrect effects, and total effects as shown in Table 11.

Table 11. Path Coefficient Between Variables

| Variable | | | Relationship | | |
|---|---|---|---|---|---|
| Exsogenous | Endogen | Intervening | direct | In-direct | Total |
| Attractiveness of Advertisement | Trustworthiness | | 0,528 | | 0,528 |
| | Suitability of Endorser and Product | | 0,377 | | 0,377 |
| Consumer Loyalty | Trustworthiness | Attractiveness of Advertise-ment | | 0,182 | 0,182 |
| | Suitability of Endorser and Product | | | 0,130 | 0,130 |
| | Brand Image | | 0,472 | | 0,472 |
| | Attractiveness of Advertisement | | 0,344 | | 0,344 |

Based on Table11, it can be explained that the coefficient of the direct relationship by the Trustworthiness variable to the Advertisements of Attractiveness is 0.528 which indicates that the relationship formed by the Trutworthiness variable on Advertisements is a positive relationship. The direct relationship coefficient by the variable suitability of endorser and products to the Advertisements Attractiveness is 0.377 which indicates that the relationship formed by the variable Conformity of endorsers with endorse products (ξ4) to Advertisements is a positive relationship.

The indirect relationship coefficient by the Trustworthiness variable on Consumer loyalty is 0.182 which indicates that the relationship formed by the Attractiveness variable on Consumer loyalty is a positive relationship. The indirect relationship coefficient by the suitability of endorser and products to Consumer loyalty is 0.130 which indicates that the relationship formed by the Endorser Conformity variable with endorse product to Consumer loyalty is a positive relationship.

The direct relationship coefficient by the Brand Image variable on Consumer loyalty is 0.472 which indicates that the relationship formed by the Brand Image variable on Consumer loyalty is a positive relationship. The direct relationship coefficient by the variable Attractiveness on Consumer loyalty is 0.344 which indicates that the relationship formed by the variable Attractiveness on Consumer loyalty is a positive relationship, So it can be concluded that the relationship that occurs between latent variables is a positive relationship. Where when the exogenous latent variable increases, endogenous latent variables also increase.

## V. CONCLUSION

Model of endorsement credibility for consumer loyalty through the attractiveness of advertisements is explained by trustworthiness and suitability of endorser and products. Through this model it can be concluded that trustworthiness and the suitability of endorsers and products have a significant linear relationship to the attractiveness of advertisements. This linear relationship indicates that the higher consumer confidence in the endorser (trustworthiness) and the suitability of endorsers and products formed by the community about the product so that can increase the attractiveness of advertisement on the product. Whereas attractiveness of endorser and expertise do not have a significant relationship to the attractiveness of advertisement.

Model for consumer loyalty model can be well explained by the variable attractiveness of advertisement and brand image. Through this model, it can be concluded that the brand image and the attractiveness of advertisement has a significant linear relationship to consumer loyalty. This linear relationship indicates that the higher the brand image that is formed in the community about the product and the higher the

attractiveness of the advertisement of a product can increase consumer loyalty to the product. These results indicate that consumer loyalty can be influenced by brand image and attractiveness of advertisement.

Marketers need to choose the right celebrity endorser because there are risks involved, such as negative publicity associated with endorsers. Thus, marketers can use the research as a reference framework in the development of advertising systems for cosmetic products that use celebrity services. so that it can increase the impact of advertising efforts and brand image to generate high customer loyalty.

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