

# Identification of Factors Influencing Physician Prescription Loyalty

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**Abstract:** Pharmaceutical industry is an important stakeholder in its role of fulfilling the needs of medicines in a healthcare system. The pharmaceutical industry is unique compared to other industries where doctors play an important role as a bridge between pharmaceutical companies and consumers. One of the determinants of success for pharmaceutical company lies in the loyalty of doctors in recommending products to patients through the prescribing process. Identification of factors that influence prescribing loyalty may help pharmaceutical companies to focus their use of resources in order to achieve a competitive advantage. This research was conducted in order to identify factors that influence physician prescribing loyalty. The research focused on dyslipidemia therapeutic area and doctors with certain specialties who usually handle cases of dyslipidemia in daily clinical practice. Sampling was taken through non-probability techniques with a purposive sampling design. The research instrument used was a questionnaire that was distributed to 110 doctors in Jakarta. The obtained data results were processed with the help of the SPSS version 25 program. Results of the study stated that the prescribing loyalty of patent drugs by doctors was significantly influenced by pharmaceutical sales representatives and sponsorship support. The other three variables, which were opinion leaders, company reputation and product quality, showed insignificant influence on the prescribing loyalty of patent drugs by doctors.

**Index Terms:** prescription loyalty; pharmaceutical sales representatives; opinion leaders; sponsorship support; company reputation; product quality.

## 1 INTRODUCTION

Pharmaceutical industry has an important role in fulfilling the basic human rights to achieve the highest attainable standard of health as mandated by World Health Organization (WHO). This industry has vital function in ensuring the availability of medicines used in health services. Peltier-Rivest (2017) stated that every pharmaceutical company has an objective to improve consumer or patient health status through research and commercialization of safe and effective medication. In doing so, pharmaceutical may gain some profit for its shareholders and potential of reinvesting in new product development. The pharmaceutical industry in Indonesia showed an excellent performance with a total value of US \$ 4.7 billion in 2017. This value was equivalent to 27 percent of the total pharmaceutical market in the ASEAN (Association of South East Asian Nation) region. Indonesia's pharmaceutical industry contributes IDR 54.4 trillion to the national GDP (Gross Domestic Product) and was able to absorb more than 40,000 workforces. Global Data Healthcare estimates that the pharmaceutical market in Indonesia will continue to grow in the future, which is estimated to reach US \$ 10.11 billion in 2021. Report from 2017 Indonesia Investment stated that there were 206 companies marketed its products in Indonesia pharmaceutical industry, which consist of 88% (182 companies) local companies and 12% (24 companies) global companies. The possibility of foreign investment in Indonesia, especially for the upstream sector in pharmaceutical companies, expected to grow in the future in line with the revision of government regulations regarding foreign investment in Indonesia. There are two categories of products marketed by pharmaceutical companies, namely OTC (Over the Counter) and prescription medication.

Consumer can directly purchase OTC medicine in various channels. In the other hand, consumer can only access prescription medication only through recommendation from healthcare professional, mainly by physician, through prescription process. PharmExec reported that in 2015 the market share for Indonesia prescription medication was 62% of the total market, while OTC took the remainder of that market share. Pharmaceutical industry has a uniqueness compare with other industries, especially in the category of prescription medication. As also evident in majority of countries around the globe, pharmaceutical companies are limited in terms of direct communication to consumers or patients (Klimanov and Frolkina, 2015). In this case, physician has critical role as a bridge between pharmaceutical companies and consumers. Thus, pharmaceutical companies usually approach physicians as target market for their activities. Prescription process by physicians seems like following the same process of buying decision. Kotler and Keller (2016) stated that there were five steps of buying decision process started from appreciation of the problem needed to be solved, information exploration, options appraisal, purchase determination, and post purchase demeanor. In the prescription process physicians usually start the problem recognition through interview with patient in order to get consumer or patient's health status information. Physicians can search more information through physical examination or order several supporting examinations such as laboratory or imaging if needed. After the diagnosis is made, physicians will evaluate several alternatives of medication that suit with the consumer or patient's health condition. Purchase determinant in the process is equivalent to the prescription by physician to the consumers or patients. Physician can evaluate the effectiveness of his/her recommendation in the future, which is similar to post purchase demeanor in buying decision process. Physicians have predilection to certain medication products in providing treatment recommendation to consumer or patients in prescription process. Murshid and Mohaidin (2017) contend that every physician usually has a list of several drug brands that often recommended for his/her consumers or patients. The list of these medication brands usually consists of several types of drugs that they know, based on clinical experience and perceptions of the effectiveness, safety, tolerability, and marketing efforts of pharmaceutical companies. The predilection for recommending a particular brand of medicinal product

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may derive from physician loyalty, past experience of successful use of the product or a result of marketing activities carried out by pharmaceutical companies. Sandip and Vishavadia (2017) stated that physicians are the focal point of companies incorporated in the pharmaceutical industry. There are two main reasons the pharmaceutical company approaches physicians in the pharmaceutical industry. The first reason is because restrictions from governments to carry out promotional activities directly to consumers or patients, especially in the prescription medication category. The other reason is the important role of physicians in choosing and recommending certain medication products to be purchased by consumers or patients. Given these important role of the physicians, discerning the factors that influence prescribing loyalty by physicians is important for the company in order to be success in this industry. Klimanov and Frolkina (2015) contend that pharmaceutical companies' success is highly dependent on physician's assessment of a medication products and recommendation given to consumer or patients in the context of prescription. Therefore it is important for pharmaceutical companies to be able to identify factors that influence prescribing loyalty. Determination of these factors will determine the strategy in building and retaining customers and increasing the success achieved by pharmaceutical company. There are several factors that can influence physician prescribing such as detailing activities by pharmaceutical sales representatives, drug samples, product characteristic, product information, branding, advertising, company reputation, influence of opinion leaders, and many others. Activities carried out by the pharmaceutical company must be in accordance with specific factors that affect prescribing so that it can have a significant impact. Pharmaceutical sales representative (PSR) is one of the factors that can influence the behavior and loyalty of prescribing physician. Valverde (2013) argued that pharmaceutical industry employ considerable time and resources in the formation and promulgation of medical information compared to production. These activities is consider to be important as a source of drug development, fulfilling drug registration requirements, protecting patents, promoting sales, and providing information to customers. Interactions between pharmaceutical sales representative and physicians are usually carried out in the context of detailing. In this detailing activity, pharmaceutical sales representative provide information about a particular medicine product to physicians. Klimanov and Frolkina (2015) contend that pharmaceutical sales representatives are essential resources in pharmaceutical companies' success. Many pharmaceutical companies are willing to allocate up to 40% of its total sales to be invested in its sales representatives. The interaction between pharmaceutical sales representatives and physicians are done with the intent to secure certain product endorsement to consumer or patient. Fickweiler *et al.*, (2017) stated that detailing activity between pharmaceutical sales representatives and physicians are conducted regularly. Pharmaceutical sales representatives are acknowledged to be the source of information as well as education from a certain point of view. Physicians presume that information provided by pharmaceutical sales representative may enhance their scientific knowledge. Another factor that considered being influential in prescribing loyalty is opinion leaders. Hawkins and Mothersbaugh (2014) stated that information that disseminated from individuals as reference source is appreciated differently. Information

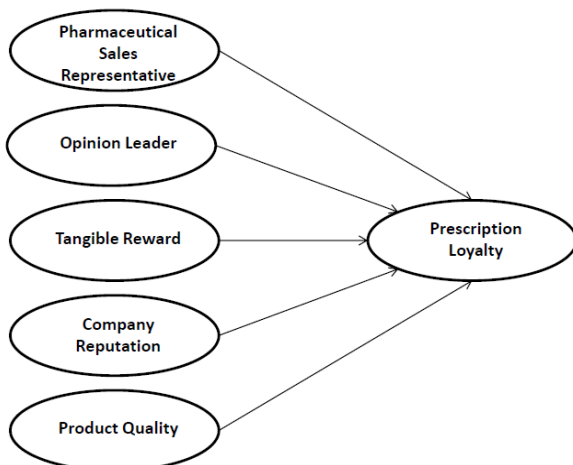
regarding specific types of information by certain individuals might value more that acknowledged more than any other individuals. These individuals, known commonly as opinion leader, are generally active in screening, depicting, and catering information on products, services or brands to other individuals in a particular group. These opinion leaders possess an effect on the prescription loyalty by physician. Factors derived from pharmaceutical companies, such as tangible rewards and company reputation, can also influence prescribing loyalty by physicians. Tangible rewards are commonly catered by pharmaceutical companies to physician through exertion of sponsorship. These rewards might be conveyed through research funding, consultation or speaker compensation, educational activities, and many other things. Pharmaceutical companies may also devote its resources to cater sponsor for continuing medical education for physician at symposium, congresses and medical conferences. These activities are considered to be crucial for information promulgation amongst healthcare professionals in order to provide better service for their patients (Klimanov and Frolkina, 2015). Corporate reputation, as one of the factor derived from pharmaceutical companies, also proposed to have a positive consequence on prescription loyalty. It has been considered as an assurance of product quality conveyed with integrity and candor. Mehralian, Sharif, Yousefi, and Akhgari (2016) recognize corporate reputation as an acknowledgement, admiration, and respect from stakeholders, especially physician, for certain pharmaceutical company. Although corporate reputation is not regarded as a specific asset in financial statement, it might deliver a crucial impact on its capacity as relational capital though increase confidence of investors, attract new employees, or positive attitude of supplier (Adeosun and Ganiyu, 2013). Another factor that also plays a role in prescribing loyalty by physicians is the product quality. In the context of pharmaceutical industry, product quality can be gauged in terms of product features such as effectiveness, side effect and tolerability. In general, prescription products in pharmaceutical industry can be categorized as generic, that include branded generic, and original (patent) medicines. In general, generic medicines usually start to be marketed by certain pharmaceutical companies soon after the original (patent) medicines loose its patent exclusivity period. Physicians showed to have strong predilection for original (patent) medicine products according to Iacocca, Sawhill, and Zhao (2015). As original (patent) medicine products loose its exclusivity and generic medicine rush into the market, the price of original (patent) medicine products does not automatically go down. This price sustainability might be happen due to better quality perception by customers on original medicine product. Exclusivity period relished by original (patent) medicine products result in pool of users that might be reluctant to switch to other products. There are several differences found in previous studies regarding the factors the affect prescription loyalty in physician. Waheed, Jallel, and Laeequddin (2011) found that tangible rewards, and pharmaceutical sales representatives as significant factors that influence prescription loyalty. Other variable investigated, such as product quality, corporate reputation, and professional influence from opinion leader, did not found to have a significant effect on prescription loyalty. In the other hand, Mehralian *et al.*, (2017) reports that opinion

## 2 LITERATURE REVIEW

Based on the research problem and gap found, this research is focusing on factors that drive the prescription loyalty by physician. There are five dependent variables that will be investigated in the relation with prescription loyalty: pharmaceutical sales representative, opinion leader, tangible reward, company reputation and product quality. Company across the globe are currently shifting from the pattern of transactional type of marketing activities, which merely focus on short-term sales, to relationship marketing that focus on nurturing long-term relationship with customers. Xhema, Metin, and Groumos (2018) contend that in order to remain to be competitive and generate sustainable profit, company is compelled to focus on retention and build long lasting relationship with customers. These activities will eventually produce customer loyalty which is an important element in determining success in the market. Sales people are one of the means to nurture a long-term relationship with customers. Sales people are considered as a link that liaise company on one side and customer or consumer on the other side. On one side sales people are company's messenger in dissemination of information regarding certain products or services. In this case sales people are expected to probe, approach, address question, negotiate price, sale, and retain relationship with customers. However on the other hand, sales people are also represent customer by conveying their needs and queries to company (Kotler and Armstrong, 2016). Klimanov and Frolkina (2015) contend that importance of long-term relationship in the pharmaceutical industry stems from the fact that pharmaceutical companies approach its customers within the individual level. This approach is primarily done through the support of pharmaceutical sales representatives. Majority of activities conducted by pharmaceutical companies are largely based on face-to-face interactions between pharmaceutical sales representatives and physicians. Pharmaceutical sales representatives have obligation to promote certain products or services from pharmaceutical companies to physicians. Fickweiler *et al.*, (2017) stated that pharmaceutical sales representatives were perceived with a constructive perspective by physicians. Physicians acknowledge the positive role of pharmaceutical sales representatives in providing specific type of information regarding the knowledge of medicinal products. It is also suggested that physician presume their interaction with pharmaceutical sales representatives could prompt their prescribing behavior. Some studies showed that sales people possess some influence on customer loyalty. Yu and Tseng (2016) contend that loyalty of insurance customers was affected by characteristic of sales people. Another study conducted by Mehralian *et al.*, (2017) in the pharmaceutical industry also showed that pharmaceutical sales representative as one of the factor that influence prescribing loyalty. Based on descriptions above, hypothesis proposed in this research: *H1: Prescribing loyalty by physician is influenced by pharmaceutical sales representative* It has been human nature to be inveigled by how other people think and behave. Schiffman and Wisenbilt (2015) admit the existence of certain individual or group of individual that possess certain influence to others. These individual or group of individuals is referred to as opinion leader. They usually influence other people around them through a process called opinion leadership. In this process, opinion leader share their point of view, experience and suggestion to other about certain type of product or services. These inputs are regarded by

other to ease the perceived risk and anxiety that emanate in decision making on product or service. This process is usually happen in definite or particular category within specific group of people. In the context of pharmaceutical industry, the existence of individuals or group of individuals who possess certain expertise or pervasive knowledge has been known for a long time. These individuals commonly referred to as key opinion leaders, have a certain degree of influence on many other doctors both domestically and internationally. Opinion leader is considered as one amongst other factors that provide robust impact in prescription loyalty, as evident in study conducted by Mehralian *et al.*, (2017). The role of opinion leaders was also evident in other industries, such as what found by Flores-Zamora and Flores-Zamora and Garcia-Madariaga (2017) that conducted a research in art service provider industries. They found opinion leader as relevant factor in customer loyalty in the context of service provide. Based on descriptions above, hypothesis proposed in this research: *H2: Prescribing loyalty by physician is influenced by opinion leader* Loyalty program as part of marketing activities offered by companies to their customer are widely known and found in the market. This program is intended to reward specific customer who engage a long term relationship with company. Several industries, such as seen in airlines, drug store, hotel, credit card and may others, are seen to implement this type of program. Implementation of this type of program is expected to result in certain type of advantage which includes long term relationship, loyalty or possibilities for cross-selling (Kotler and Keller, 2016). Tangible reward is considered as one type of loyalty program that can be offered by companies. Huang (2015) categorized tangible reward as part of alternative investment of relationship marketing. Through tangible reward companies may provide certain type of tangible benefit such as in the form of discounts or bonus. In the context of pharmaceutical industry, tangible reward from company is seen in the milieu of medical education sponsorship directed to physicians. These activities are perceived as positive by physician as it help them in update their knowledge and forum of information exchange among colleague regarding current development in medical field (Klimanov and Frolkina, 2015). Huang (2015) stated that customer gratitude might emerge from the practice of providing tangible reward. This gratitude would eventually construct customer loyalty. Peltier-Rivest (2017) contends that human is mutual in its nature. Thus any accolade, not matter how small it is, provided by pharmaceutical company may eventually exert an effect to prescribing behavior of physicians. Several studies conducted by Fickweiler *et al.*, (2017) and Wood *et al.*, (2017) also found that tangible rewards provided by pharmaceutical companies can influence the prescription of medicinal products given by doctors to consumers Based on descriptions above, hypothesis proposed in this research: *H3: Prescribing loyalty by physician is influenced by tangible reward* Corporate reputation basically is a construct of perception in the mind of relevant stakeholders of specific companies (Helm and Tolsdorf, 2013). Another explanation on corporate reputation was given by Leaniz and Rodriguez (2016) that define it as comprehensive perception of one specific company in the form of hope or association of individual when decided to use product or service. Corporate reputation emerges through the results of past behavior of company. It can be used as communication tools to specific target market on the promise of product or

service quality. Thus, although not considered as tangible asset recorded in common financial statement, corporate reputation can be considered as the source of achieving competitive advantage in the market (Adeosun and Ganiyu, 2013) Corporate reputation is pharmaceutical industry is also considered as crucial in study conducted by Mehralian *et al.*, (2017). In the context of pharmaceutical industry, corporate reputation is the level of appreciation, assurance and honor deriving out of external stakeholders, in particular from physicians, to specific pharmaceutical company. All of this eventually will lead to loyalty as evident in this study as one of the factors that significantly influence prescription loyalty by physician. The same results also found in several other studies such as what has been found by Leaniz and Rodriguez (2016) and Klimanov and Frolkina (2015). These studies is in line regarding the influence of corporate reputation in customer loyalty, as stated by Mehralian *et al.*, (2017). Based on descriptions above, hypothesis proposed in this research: *H4: Prescribing loyalty by physician is influenced by corporate reputation* Kotler and Keller (2016) stated that a product with a good quality is a product that accommodated the expectations from customers. Product quality is seen as the source of profitability in a company. Through product quality, a company may leverage customer satisfaction and propose higher product prices. Product quality is considered as a critical success factor of company in pharmaceutical industry in order to develop and grow. Competition among pharmaceutical companies on characteristic of products can be seen in the market. Pharmaceutical companies competes each other in presenting its product to gain physician's loyalty in prescribing their medicinal products (Valverde, 2013). Previous studies found that product quality influence customer satisfaction and loyalty. Chang *et al.*, (2015) found that product quality was indirectly influence customer loyalty through customer satisfaction. Similarly, Moorthy *et al.*, (2018) also found that perceived quality of certain product by customers assert robust influence on customer satisfaction. This satisfaction was eventually brought the end results of customer loyalty. Other studies, such as those conducted by Lu *et al.*, (2017), Xhema *et al.*, (2018) and Klimanov and Frolkina (2015), also conclude the same results. Based on descriptions above, hypothesis proposed in this research: *H5: Prescribing loyalty by physician is influenced by product quality* Thus, conceptual model for this research can be seen in figure 1.



**Figure 1. Research Conceptual Model**

### 3 METHOD

This research is focused on the dyslipidemia therapeutic area. Dyslipidemia was chosen since it is a chronic condition which is an appropriate condition to assess prescription loyalty by physicians. The sample of this research was aimed at physicians who prescribe dyslipidemia medication. There were 110 physicians approached to be sample in this research. Non-probability sampling technique with purposive sampling design was used. The inclusion criteria for sample were as follow: Physician in the area of Jakarta, who works at private clinics, private hospitals, government hospitals and other institutions Physician with certain specialties, such as general practitioners, internal medicine, cardiologist, neurologist, endocrinologist and nephrologist. Although basically all physician's specialties may prescribe dyslipidemia medication, these selected specialties have higher probabilities in managing dyslipidemia cases in their daily practices This research was conducted with a quantitative approach to search for answers to the problems of physician prescription loyalty. Several hypotheses were developed to explain physician prescribing loyalty variables by looking at their relationship with several independent variables, namely pharmaceutical sales representative, opinion leader, tangible reward, company reputation and product quality. The operationalization of variables in this research is as in Table 1. Questionnaire with Likert scale was used as the research instrument. Research instruments will be assessed for validity and reliability by measuring goodness of measures. Regression analysis was done with SPSS (Version Package for the Social Science) version 25 software. We use the measurement scale of Prescription Loyalty from Chang, 2018, the measurement scale of Pharmaceutical Sales Representative, Opinion Leader, Tangible Reward from Mehralian *et al.*, 2016, and the measurement scale of Corporate Reputation from Agrawal *et al.*, 2015.

### 4 RESULTS

#### 4.1. Descriptive Statistic

From the total of 190 questionnaires distributed, 110 questionnaires was returned or 58% return rate. Majority of respondents were men with a percentage of 59.1% or 65 people. The female respondents in this study were 45 people or 40.9% of the total respondents. Table 1 showed respondent's age profile. It showed that majority of respondents are 31- 40 years of age, with the percentage of 35.5%, followed by 41-50 years of age and 51-60 years of age, with 24.55 and 20.9% respectively. The least age range of respondents was 71-80 years of age and 25-30 years of age with 0.95 and 4.5% respectively. Results from the statistical data processing showed that the largest specialization is general practitioners with 65 respondent or 59.1%. Second largest respondent are internist, with 17 respondent or 15.5%, followed with cardiologist (13.6%), and neurologist (10%). The least number of specialties were endocrinologist and nephrologist with 0.9% for each specialty.

**TABLE 1 AGES PROFILE**

Age Range	Frequency	Percentage
25-30	5	4.50%
31-40	39	35.50%
41-50	27	24.50%
51-60	23	20.90%
61-70	15	13.60%
71-80	1	0.90%
<b>Total</b>	<b>110</b>	<b>100.00%</b>

Majority of respondent works in private hospitals, with 46.2% of percentage, and private clinics, with 38.5% of percentage. Only 9.1% of physician works in institutions and 6.3% works in government hospitals.

**TABLE 2 WORKPLACE PROFILE**

Workplace	Response	
	N	Percentage
Private Clinic	55	38.5%
Private Hospital	66	46.2%
Government Hospital	9	6.3%
Institution	13	9.1%
<b>Total</b>	<b>143</b>	<b>100.0%</b>

**TABLE 3 VALIDITY TEST**

Indicator	Pearson Correlation	r table	Sig (2-tailed)	Conclusion
LP1	0.854	0.1857	0.000	Valid
LP2	0.738	0.1857	0.000	Valid
LP3	0.892	0.1857	0.000	Valid
TP1	0.707	0.1857	0.000	Valid
TP2	0.815	0.1857	0.000	Valid
TP3	0.761	0.1857	0.000	Valid
TP4	0.832	0.1857	0.000	Valid
PO1	0.754	0.1857	0.000	Valid
PO2	0.823	0.1857	0.000	Valid
PO3	0.856	0.1857	0.000	Valid
DS1	0.764	0.1857	0.000	Valid
DS2	0.844	0.1857	0.000	Valid
DS3	0.810	0.1857	0.000	Valid
RP1	0.878	0.1857	0.000	Valid
RP2	0.910	0.1857	0.000	Valid
RP3	0.886	0.1857	0.000	Valid
KP1	0.931	0.1857	0.000	Valid
KP2	0.938	0.1857	0.000	Valid
KP3	0.940	0.1857	0.000	Valid

Validity test results, seen in table 3, showed that r value of all indicators were higher than r table. The test results also showed that all indicators have a significance value of less than 0.05. Therefore, it can be concluded that all indicators are valid. Likewise, the results of the reliability test, seen in table 4, showed that the Cronbach's Alpha value of all variables were more than 0.7. Based on these results, it can be concluded that the tools used is reliable.

**TABLE 4 RELIABILITY TEST**

Variable	Cronbach's Alpha	N of items
Prescription Loyalty	0.772	3
Pharmaceutical Sales Representative	0.776	4
Opinion Leader	0.733	3
Tangible Reward	0.713	3
Corporate Reputation	0.870	3
Product Quality	0.925	3

## 4.2. Regression Analysis

Results from statistical analysis of regression analysis showed in table 5.

**TABLE 5 REGRESSION ANALYSIS**

	t-value	Sig.
(Constant)	3.152	1.39
Pharmaceutical Sales Representative	0.178	0.079
Opinion Leader	-0.077	0.08
Tangible Reward	0.322	0.092
Corporate Reputation	0.16	0.092
Product Quality	0.03	0.073

\* Dependent variable: Prescription loyalty

Regression analysis showed that pharmaceutical sales representatives resulted in significant value of 0.026 and t value above the t table. Thus it can be said that prescription loyalty is significantly influenced by pharmaceutical sales representatives. In other words, the first hypothesis is accepted. This finding is different from the research by Klimanov and Frolkina (2015) in the context of Russia ophthalmology market. In that research there were no factors associated with pharmaceutical sales personnel, either in the form of professional values or personality of pharmaceutical sales representatives, which possess significant influence on physician prescribing loyalty. On the other hand, this finding is in line with several studies conducted by Yu and Tseng (2016), and Fickweiler *et al.*, (2017). In these studies it was stated that pharmaceutical sales representatives considered as one of the important factors in influencing prescribing behavior and physician loyalty. Mehralian *et al.*, (2017) in his research also stated that although it was the lowest significant factor compared to other variables, pharmaceutical representatives had an influence on prescribing loyalty behavior by physicians. The second hypothesis proposes that physician prescription loyalty is influenced by opinion leaders. Regression analysis showed that opinion leader variable did not provide a significant result or influence to prescription loyalty. In other words, the second hypothesis is rejected. This finding is different from research conducted by Klimanov and Frolkina (2015), which found that opinion leaders is one of the significant determinants of physician prescribing loyalty. In addition, the results of the study also contradict the research conducted by Mehralian *et al.*, (2017) which found opinion leaders as the most influential factor in physician prescription loyalty. The third hypothesis proposes that tangible rewards influence physician prescription loyalty. The results of the statistical data show a significance of 0.001 for the tangible reward variable. Thus it can be stated that the third hypothesis is accepted. This finding is in line with previous studies, such as what has been found in the research conducted by Huang (2015) which stated that there was a positive and significant relationship between tangible rewards and customer loyalty. Another study conducted by Fickweiler *et al.*, (2017) and Wood *et al.*, (2017) also clearly stated that tangible reward provided by pharmaceutical companies influence the physician prescription pattern to consumer. However this finding is contradict previous research conducted by Klimanov and Frolkina (2015) and Mehralian *et al.*, (2017) which found that tangible reward provided by pharmaceutical companies did not have a significant effect on prescribing loyalty by physicians. The fourth hypothesis proposes that prescription loyalty is influenced by the corporate reputation of pharmaceutical

companies. The results of regression analysis showed that the corporate reputation variable produces a significance value of 0.086. Referring to these results, which are above the 0.05 level, it can be stated that this hypothesis is rejected. This result indicates that prescription loyalty is not significantly affected by the corporate reputation. This finding is different from the studies conducted by Leaniz and Rodrigues (2016) and Xhema *et al.*, (2018). These studies found that corporate reputation significantly influence customer loyalty. The same thing was found by Mehralian *et al.*, (2017) which stated that corporate reputation is one of the factors that had a large significance on prescribing loyalty. On the other hand Moorthy *et al.*, (2018), that conducted a research in internet service provider industry, stated that corporate image is not directly related to customer loyalty. The fifth hypothesis proposes that prescription loyalty is influenced by product quality. The results of the statistical data processing on this variable showed a significance value of 0.686. From this result, it can be concluded that this hypothesis was rejected. This finding is different from previous studies conducted by Lu *et al.*, (2017); Moorthy *et al.* (2018); and Xhema *et al.*, (2018). These studies found that product quality influence customer satisfaction and loyalty. On the other hand, Chang *et al.*, (2015) contend product quality does not directly influence customer loyalty. Product quality only provides indirect influence on purchase intention and behavior through customer satisfaction.

## 5 CONCLUSION

This research found that out of five hypotheses proposed, there were two accepted hypotheses and three rejected hypotheses. Two accepted hypotheses were the influence of the pharmaceutical sales representatives and tangible reward on physician prescription loyalty. The other three variables, which were opinion leader, corporate reputation and product quality, were not proven to have a significant influence on prescription loyalty. These findings have several differences as well as similarities with previous studies. There are several things can be identified as the source of these differences and similarities. Moorthy *et al.*, (2018) contend that differences in industry may cause differences in factors or variables that affect customer loyalty. In addition to industry differences, geographical and cultural influences could also influence factors or variables that affect customer loyalty. Mehralian *et al.*, (2017), which conducted research in the pharmaceutical industry, stated that factors influencing prescription loyalty might differ from one country to another. Pharmaceutical sales representative is representation of pharmaceutical companies to physicians. In their daily activities pharmaceutical sales representatives conduct face-to-face interactions with physicians. The objective of this interaction is to reach an agreement so that physician could prescribe, use and recommend products or services from a pharmaceutical company (Klimanov and Frolkina, 2015). This research showed that pharmaceutical sales representative as a significant influence on prescription loyalty by physicians. Other variable that also showed significant influence was tangible reward. This research showed that tangible reward resulted in very significant influence for physician prescription loyalty. Pharmaceutical companies usually provide sponsorship support to doctors in the form of continuous medical education, research assistance, educational activities, and other tangible reward. The provision of sponsorship support is permitted but must be carried out within certain

limitation. All relevant stakeholders, such as government, medical organization, and institutions, need to monitor these activities so that it will benefit for consumer or patient instead of others. This research found that opinion leader showed no significant influence on prescription loyalty. The influence of opinion leaders is actually very important especially when new product is started to be marketed. The influence of these opinion leaders is well recognized by many pharmaceutical companies which can be seen from the incessant activities of pharmaceutical companies to engage Key Opinion Leaders. This activity can have a negative effect on the physician's perceptions because of the possibility of one same key opinion leader endorse different thing in a different occasion, depend on the companies that approach him/her. In addition, it must also be realized that physician need some sort of differentiation in order to attract more patients. Uniqueness in choosing medication or combination of medications can be an important differentiation between physicians. This may not be achieved if a physician merely follows recommendations from key opinion leader. The remaining two variables, which are corporate reputation and product quality, also do not show a significant influence on prescription loyalty. However it does not mean that physicians do not pay attention these variables in recommended certain medicinal products to their patients, since it would be not ethical to do so. A possible explanation underlying this finding is the existence of "point of parity" as explained in the precious research conducted by Klimanov and Frolkina (2015). In light of the "point of parity", physician regarded corporate reputation and product quality as equal for all products marketed by pharmaceutical companies. Thus these variables do not affect their prescription loyalty. Identification of variables or factors that influence prescription loyalty certainly has several implications. These research findings may be used by pharmaceutical companies as guidance in focusing their activities. As pharmaceutical companies have certain limitation, especially in terms of resources, it will be beneficial if they can focus their activities in selected factors that influence physician prescription loyalty. These studies also can be used as reference for future research for customer loyalty in other industries.

## REFERENCES

- [1] Adeosun, L.P.K., and Ganiyu, R.A., 2013. Corporate reputation as a strategic asset. *International Journal of Business and Social Science*, Vol. 4, No. 2, pp. 220-225
- [2] Agrawal, J., Osiyevskyy, O., and Feldman, P.M., 2015. Corporate reputation measurement: Alternative factor structures, nomological validity, and organizational outcomes. *Journal of Business Ethics*. Vol. 130, pp. 495-506. DOI: 10.1007/s10551-014-2232-6.
- [3] Britton, K., Koseki, S., and Dutta, A., 2018. Expanding Markets while Improving Health in Indonesia: Private Health Sector in the JKN Era. Washington, DC: palladium, Health Policy Plus; and Jakarta, Indonesia: TNP2K
- [4] Chang, P-C., Chuang, C-L., Chuang, W-C., and Lin, W-C., 2015. An examination of the effects of quality on customer loyalty: the automobile industry in Taiwan. *Total Quality Management*, Vol. 26. No. 2; pp. 203-217. <https://doi.org/10.1080/14783363.2012.704268>
- [5] Fickweiler, F., Fickweiler, W., and Urbach E., 2017. Interactions between physicians and the pharmaceutical industry generally and sales representatives specifically and their association with physicians' attitudes and

- prescribing habits: a systematic review. *BMJ Open*, Vol. 7 No. 6. DOI: 10.1136/bmjopen-2017-016408.
- [6] Flores-Zamora, J., and Garcia-Madariaga, J., 2017. Does opinion leadership influence service evaluation and loyalty intentions? Evidence from an art service provider. *Journal of Retailing and Consumer Services*, Vol. 39, pp. 114-122. <https://doi.org/10.1016/j.jretconser.2017.07.008>
- [7] Hawkins, D. I., and Mothersbaugh, D. L., 2014. *Consumer Behavior: Building Marketing Strategy*. McGraw-Hill, New York.
- [8] Helm, S. and Tolsdorf, J., 2013. How does corporate reputation affect customer loyalty in a corporate crisis? *Journal of Contingencies and Crisis Management*, Vol. 21, No.3, pp. 144-152. <https://doi.org/10.1111/1468-5973.12020>
- [9] Huang, M-H., 2015. The influence of relationship marketing investment on customer gratitude in retailing. *Journal of Business Research*, Vol.62, No. 6, pp. 1318-1323. <https://doi.org/10.1016/j.jbusres.2014.12.001>
- [10] Iacocca, K., Sawhill, J., and Zhao, Y., 2015. Why brand drug priced higher than generic equivalents. *International Journal of Pharmaceutical and Healthcare Marketing*, Vol. 9, No. 1, pp. 3-19. DOI: <https://doi.org/10.1108/IJPHM-01-2014-0005>
- [11] Klimanov, D., and Frolkina, E., 2015. The impact of CRM system use on companies' customer understanding: the case of the Russian ophthalmology market. *Trziste* Vol. 27, No. 1, pp 75-92
- [12] Kotler, P., and Armstrong, G., 2016. *Principles of Marketing*. Pearson Education Limited, Essex
- [13] Kotler, P. and Keller, K. L. 2016. *Marketing Management*, 15th Edition, Pearson Education, Inc
- [14] Lu, X., Liu, H.W., and Rahman, M., 2017. The impact of corporate social responsibility on customer loyalty: A case for two global corporations in China. *Strategic Change*, Vol. 26, No. 3, pp. 251-260. <https://doi.org/10.1002/jsc.2126>
- [15] Leaniz, P.M.G., and Rodriguez, I.R.B., 2016. Corporate image and reputation as drivers of customer loyalty. *Corporate Reputation Review*. Vol. 19, No. 2, pp.166-178
- [16] Mayer-Warden, L., 2015. Effects of loyalty program rewards on store loyalty. *Journal of Retailing and Consumer Services*. Vol. 24; pp. 22-32. <https://doi.org/10.1016/j.jretconser.2015.01.001>
- [17] Mehralian, G., Sharif, Z., Yousefi, N., and Akhgari, M., 2017. Physicians' loyalty to branded medicines in low-middle-income countries: A structural equation modeling. *Journal of Generic Medicines*, Vol. 13, No. 1, pp. 9-18. <https://doi.org/10.1177/1741134316673227>
- [18] Moorthy, K., Ting, L.C., Na, S.W., Ching, C. T., Loong, L.Y., Xian, L.S., and Ling, T.W., 2018. Corporate image no longer leads to customer satisfaction and loyalty: a Malaysian perspective. *International Journal of Law and Management*, Vol. 60, No. 4; pp. 934-952. DOI: <https://doi.org/10.1108/IJLMA-04-2017-0082>
- [19] Murshid, M.A., and Mohaidin, Z. 2017. Physicians' perceptions towards brand medicine and its effect on prescribing: A narrative review, *Journal of Generic Medicines*; Vol. 13, No. 4, pp. 157-183. <https://doi.org/10.1177/1741134317709509>
- [20] Peltier-Rivest, D., 2017. The prevention and detection of corruption in pharmaceutical companies. *Pharmaceutical Policy and Law*. Vol 19, pp. 17-31
- [21] Schiffman, L. G. and Wisenblit, J. L. 2015. *Consumer Behavior*, 11th Edition. Pearson, New York.
- [22] Sandip, S., and Vishavadia, K., 2017. Impact Study on Various Promotional Practices Done by Pharmaceutical Companies on Doctor's Prescription Behavior: What Does Literature Say? *International Journal of Economic Research* Vol. 14, No. 14, pp.15-22
- [23] Valverde, J. L., 2013. The pharmaceuticals industry in trouble. *Pharmaceuticals Policy and Law*. Vol. 15, pp. 51-69. DOI: 10.3233/PPL-130361
- [24] Waheed, K.A., Jallel, M., and Laeequddin, M., 2011. Prescription loyalty behavior of physicians: an empirical study in India. *International Journal of Pharmaceutical and Healthcare Marketing* Vol. 5 No. 4; pp.279-298. DOI: <https://doi.org/10.1108/17506121111190112>
- [25] Wood, S.F., Podrasky, J., McMonagle, M.A., Raveendran, J., Bysshe., T., Hogenmiller, A., and Fugh-Berman, A., 2017. Influence of pharmaceutical marketing on Medicare prescription in the District of Columbia. *PLoS ONE* Vol. 12 No.10, DOI: 10.1371/journal.pone.0186060
- [26] Xhema, J., Metin, H., and Groumpos, P., 2018. Switching-cost, corporate image and product quality effect on customer loyalty: Kosovo retail market. *IFAC-PapersOnLine*. Vol. 51, No. 30, pp. 287-292. <https://doi.org/10.1016/j.ifacol.2018.11.303>
- [27] Yu, T-W., and Tseng, L-M., 2016. The role of salespeople in developing life insurance customer loyalty. *International Journal of Retail & Distribution Management*. Vol. 44, No.1, pp. 22-37. DOI: <https://doi.org/10.1108/IJRDM-06-2014-0074>