

PAPER • OPEN ACCESS

## Effects of brand, tariff, network on customer preference in telecommunication.

To cite this article: H Nasution *et al* 2019 *IOP Conf. Ser.: Mater. Sci. Eng.* **505** 012100

View the [article online](#) for updates and enhancements.



**IOP | ebooks™**

Bringing you innovative digital publishing with leading voices to create your essential collection of books in STEM research.

Start exploring the collection - download the first chapter of every title for free.

# Effects of brand, tariff, network on customer preference in telecommunication.

H Nasution, L Ginting and J Hidayati

Industrial Engineering Department, Universitas Sumatera Utara

E-mail: [ls.ginting@gmail.com](mailto:ls.ginting@gmail.com)

**Abstract.** There are many service providers that offer telecommunication services. To win the competition, service providers must know their customer. Customer chose service provider's products based on their preference. In this paper, discussed about effects of brand, tariff, and network to consumer while choose telecommunication service provider. This research was conducted by survey in Medan City by using sample 331 of prepaid customer. The paper show network is the highest correlation score. Network and brand have significant relation to customer preferences. To gain market share, service provider must maintain their network.

## 1. Introduction

Consumer preferences can mean likes, preferences or something preferred by consumers. This preference is formed from the perception of the product (Assael, 2002). Customer preference is a complex combination of each individual characteristic and it is challenging task to define preferences when tailoring a product (Jobber, 2004)

Ashaduzzaman et. al. (2011) define people in Bangladesh choose service provider based on tariff, brand and customer service. Srinuan, et. al. (2014) define that people in Swedia choose cellular operator based on brand dan discount tariff. Based on reasearch of Confraria et. al. (2016), people in Portugal choose service provider based on tariff, network, relation.

In this study, disscussed about effects of brand, tariff, network on consumer preferences. Knowing customer's preferences help service provider create product/service that is offered to customer. Changing customer preference need much investment than offer product according customer behavior (Kotler and Amstorong, 2004 ). Therefore, service provider need to learn more about customer preferences.

## 2. Methods

### 2.1. Sampel

This study used 331 samples of prepaid customer. In this reaserch use Gervitz theory to define total sample. Theory Gervitz (1994) defines if population more than 10.000, then total sample between 200-1000. The data was collected by questioner.

### 2.2. Operation definition and measurements of variable

Based on literature, definition of this study are:

#### 2.2.1. Brand



Brand is the identity of a product, according to Ercis et. al. (2012) brand is the name and symbol. Brand attaches to consumer thinking (Chaovanova et. al., 2015). A brand is a brand perception associated with a brand association inherent in consumer memory. Trust of the brand as the willingness of the average consumer to depend on the ability of a brand in carrying out its utility or function (Chaudhuri and Holbrook, 2001). In this study, indicators used are logos / signs / symbols known by consumers, brands familiar with consumers, and consumers believe in the brand.

### 2.2.2. *Tariff*

Tariff is the cost incurred to obtain a particular service. Tariff is the amount of expenses incurred by customers in accessing the service (Ashaduzzaman et. al., 2011). Price/tariff is a marketing mix element that is flexible, meaning it can be changed quickly. The price / tariff indicator that will be used in this research is price according to quality, and affordable tariff.

### 2.2.3. *Network*

Network quality can be defined as the specific requirements provided by the network to the user, required to achieve the required application functionality (service). In this study, indicator of network are coverage, quality (Mehmet et. al., 2012 ; Sirikit, 2000).

## 2.3. *Hypotheses*

In this reasearch, there are :

- Hypothesis 1

$H_0$  : There is no significant influence between brands on consumer behaviour in choosing cellular provider

$H_1$  : There is a significant effect between brands on consumer behaviour in choosing cellular provider

- Hypothesis 2

$H_0$  : There is no significant influence between tariffs on consumer behaviour in choosing cellular provider

$H_1$  : There is a significant effect between tariffs on consumer behaviour in choosing cellular provider

- Hypothesis 3

$H_0$  : There is no significant influence between networks on consumer behaviour in choosing cellular provider

$H_1$  : There is a significant effect between networks on consumer behaviour in choosing cellular provider

## 3. **Result and Discussion**

Data collected as many as 331 respondents, after the data collected then researcher do screening. From the data, 290 respondents data that is proper for processing, this is because there are 41 respondents that domicile are outside of Medan and do not use prepaid service. After doing the coding, data is tested to know validity and reliability.. The test show value of Cronbach's Alpha r-count is greater with r-table (r-table = 0.6). R count > r-table 0.6, it means data is reliable.

**Table 1. Reliable Test**

Variable	Cronbach's Alpha	Remark
Brand	0.792	Reliable
Tariff	0.791	Reliable
Network	0.783	Reliable

Correlation test is used to know the relationship between dependent variable that is buying behavior and independent. Correlation coefficient value indicates strong or weak relationship between dependent and independent variables and the direction of the relationship. Correlation table is tested with Pearson. If correlation value (R-value) between 0.4 - 0.699 show medium correlation. Low correlation if R-value between 0.299 - 0.699. Correlation test can be seen below.

**Table 2. Correlation Test**

Variable	Correlation	Remark
Brand	0.604	Medium Correlation
Tariff	0.253	Low Correlation
Network	0.558	Medium Correlation

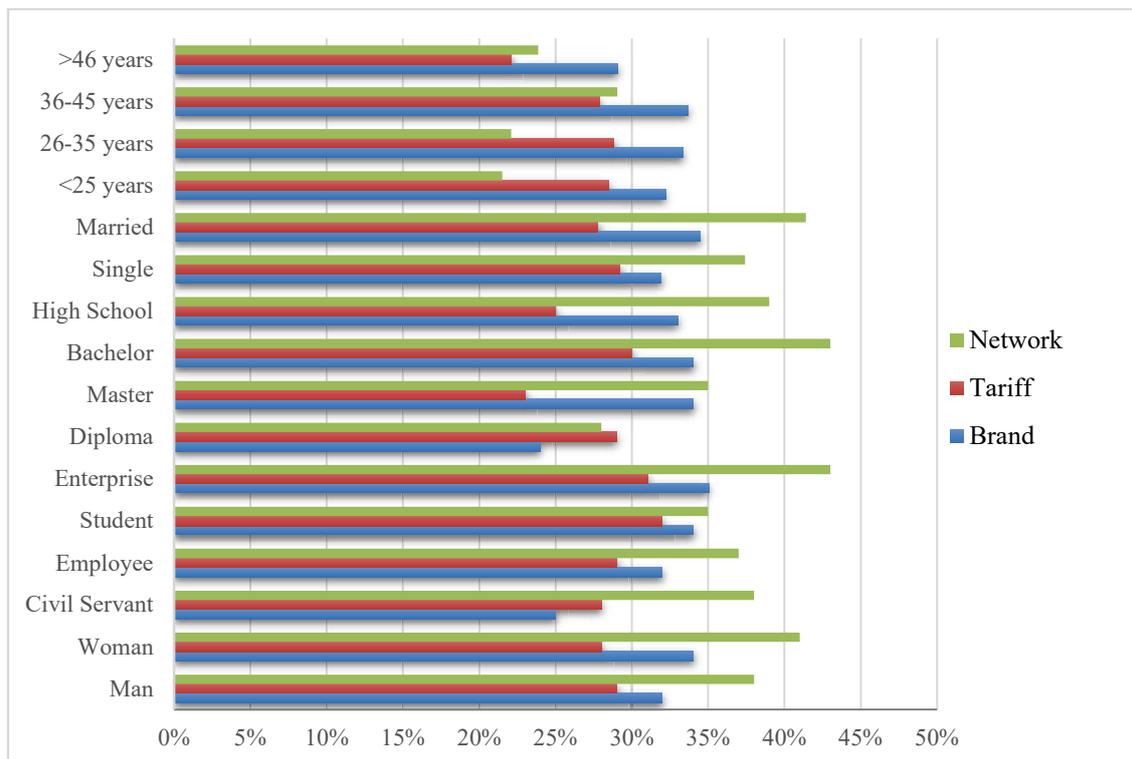
From data, hypothesis testing was done by double correlation of t-test and f-test with 95% confidence level ( $\alpha = 0.05$ ) for t-test and f-test with same level of 95% ( $\alpha = 0.05$ ). F-test is used to test whether variables exist simultaneously (together) have a significant effect or not. From result of calculation of f-test obtained significant value that is 0.00. It means variabel simultaneously have a significant effect to customer preferences. From t-test, variable brand and network show t-test > t-table, it means H0 rejected. Meanwhile t-test tariff < t-table, it means H0 accepted. It can be seen at table below.

**Table 3. Hypothesis Test**

Variable	t-test	t-table	Remarks
Brand	6.645	1.96	<b>H0 Rejected</b>
Tariff	-0.68	1.96	H0 Accepted
Network	4.76	1.96	<b>H0 Rejected</b>

Based on data calculation, network and brand have significant effects to customer preferences. Meanwhile, tariff don't have significant effect to customer preferences.

Customer profile below show that almost all corespondent characteristic choose network as first preferences, then brand. The less favorite is tariff. Based on age, brand is the most preference. Based on relationship network is the most preference. Based on education level, employment status, and gender mostly people in Medan choose network as their first preferences. It can be shown in figure below.



**Figure 1. Correspondent Data**

#### 4. Conclusion

According to Indonesian survey in Medan, show that mostly people prefer network as their first preferences. Tariff is the less liked. The second preferences is brand. From Hypotheses test, network and brand have significant effect to customer preferences. Meanwhile, tariff did not have significant effect to customer preferences.

To improve market share, service provider must maintain their network and brand. Maintain network can be done by add telecommunication tower, improve capacity of telecommunication tower and add power backup.

#### 5. References

- [1] Assael. 2002. *Consumer Behavior and Marketing Action*. 3rd edition. Kent Publishing Company. Boston Massachusetts.
- [2] Jobber, D. 2004. *Principles and Practice of Marketing* 4th edition. McGraw Hill, Maidenhead.
- [3] Ashaduzzaman, et. al. 2011. *Consumer Choice Behaviour Towards Mobile Phone Operators in Bangladesh*. *Researchers World*; Malegaon 2.4 (30-39).
- [4] Pratompong Srinuan, et al. 2014. *An empirical analysis of multiple services and choices of consumer in the Swedish telecommunications market*. *Telecommunications Policy* 38 (2014) 449–459. Elsevier Ltd.
- [5] Confraria, Ribeiro, Vasconcelos, 2017. *Analysis of consumer preferences for mobile telecom plans using a discrete choice experiment*. *Telecommunications Policy* 41 (2017) 157–169. Elsevier Ltd.
- [6] Chaudhuri, A., Holbrook, M.B., 2001. *The chain of effects from brand trust and brand affect to brand performance: the role of brand loyalty*. *J. Mark.* 65 (2), 81–93.
- [7] Gervitz. 1994. *Developing New Products TQM*. McGraw-Hill
- [8] Chovanova H, Aleksander Korshunov, Dagmar Babcanova. 2015. *Impact of Brand on Consumer Behavior*. *Procedia Economics and Finance* 34 (2015) 614 – 621. Elsevier

- [9] Kotler, P., and Armstrong, G. 2004. Principles of marketing. (10 th ed), Upper Saddle River. Pearson Prentice Hall.
- [10] Ercis, Aysel, et. al. 2012. The Effect of Brand Satisfaction, Trust and Brand Commitment on Loyalty and Repurchase Intentions. International Strategic Management Conference. Elsevier.
- [11] Mehmet, Karacuka, et. al. 2012. Consumer Choice and Local Network Effects in Mobile Telecommunications in Turkey. Telecommunications Policy 37 (2013) 334–344. Elsevier Ltd.
- [12] Sirikit, Anuchit. 2000. Service Quality, Customer Behaviour Intentions and Customer Retention of Telecommunication Services in Thailand. Dissertation.