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Understanding Customer Behavior In An Online Travel Agent: The Influence of Gender, User's City Location, and Loyalty Status towards Promotion Usage during COVID-19 Pandemic

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Abstract

With the rising popularity of online activity and state-of-the-art technology these past few years, it is only natural that the travel agency industry has shifted its focus from offline to online selling. Rising demand for online travel purchases means Online Travel Agent (OTA) needs to stay competitive in the industry. Moreover during COVID-19 it is becoming more important to stay competitive. Among all of the 50 plus online travel agencies in Indonesia, there are several that are bigger than the others; these include Traveloka and tiket.com. One of the strategies that these companies implement to stay competitive is giving out promotion vouchers; however, do they really work for all of their customers? In order to best understand OTA customers, this research analyzes the impacts of gender, city demographic, and the user's loyalty status in an Indonesian Online Travel Agent on each customer's usage on promotion vouchers. Data was collected from tiket.com's database. The findings will provide evidence as to whether the gender, user's city location, and the loyalty member status have a positive effect on promotion voucher usage in an Online Travel Agent.

Keywords
Cutomer behavior; online travel; promotion

I. Introduction

Online purchase has been one of the most prominent ways of purchasing products and services. Better internet and technology infrastructure has certainly pushed this generation to be much more online driven. With millions of people buying from the online platform, it can be tremendously hard to find the jewel in the mud in terms of your target market strategy and marketing. All sectors of every industry have all joined the online selling bandwagon, including the travel industry. Tourism is indeed one of the most important parts of every country's economy, and previous studies confirmed tourism's positive economic impact in most, but not all, circumstances. It is indisputable that travel companies stay quick on their feet to make sure that they can cater the demand for this industry.

Since early 2020 when Covid-19 striked, it definitely hasn't been easy for all types of businesses, especially the tourism industry where countries do travel bans and limit tourism activity even though the world economy isn't stable yet. The outbreak of this virus has an impact of a nation and Globally (Ningrum et al, 2020). The presence of Covid-19 as a pandemic certainly has an economic, social and psychological impact on society (Saleh and Mujahiddin, 2020). Covid 19 pandemic caused all efforts not to be as maximal as expected (Sihombing and Nasib, 2020). Despite the pandemic outbreak, one of the biggest OTA, tiket.com has been maintaining their sales and have decided to not lay off any employees since the start of pandemic in March 2020. However, we can't deny the fact

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that people no longer make plans regarding holidays or excursions, and the activity of tourism reservations has ceased almost entirely. Therefore, it is during this time that OTA needs to implement the right promotional strategies and techniques to make sure they stay alive during this pandemic and eventually to the future.

As we break down the tourism industry, there are five main sectors as stated by Eurostar: accommodation facilities, recreation sector, transport sector, voyage organizers, and tourism authorities. Most of these sectors have been provided by tiket.com, and due to that, there are different varieties of customers out there in this industry that need to be taken into account for. However, travel customers' preferences to buy their travel needs online may be dependable on the marketing promotions and the product offerings. Customers may be more inclined to buy a certain product versus the other, depending on the promotion and also what they need at the moment. Loyal customers can also be defined by how frequent they purchase and how much they have spent in one business over the user's lifetime. While the database can easily show who are the users with the most customer spending or most usage on promotion vouchers (in $ amount), tiket.com won't be able to do marketing promotion specifically for each customer for best outcomes.

Marketing promotions such as direct discount and discount voucher have been widely used in all e-commerce in various industries, and it is one of the most effective marketing strategies out there. In order for the promotion process to run effectively, the tourism company must use a marketing strategy for its product. However, companies including tiket.com tend to never dig deeper on their different target markets and their customers' segmentations. Instead of giving the right promotion to the right group of people, they just guess and assume on what promotions are applicable for everyone, and might end up giving too much discount than they actually should. Therefore, different variables that might affect users' tendencies to use promo vouchers are needed, so they can make the right marketing strategies for all of their customers accordingly by targeting the right customer.

1.1 Research Problem

This research aims to analyze whether there are variables that positively impact customers' tendency to use promotion vouchers. Hypothesis will be tested using these three variables: Gender, User's City Location, and Loyalty Member status.

1.2 Research Question

Do gender, user's city location, and its tiket.com loyalty member status bring any influence on each user's behavior towards using promotion vouchers? If they do have any influence, which sub-variable of that particular variable brings the most and the least influence?

II. Review of Literature

2.1 Online travel agent service

According to, Online travel agencies (OTAs), such as Hotels.com and Expedia as well as OYO in India and Ctrip in China, are travel aggregators who interface with prospective travelers via the Internet to sell travel-related products such as flights, cruises, holiday packages, hotel rooms, and so on (Rezgo, 2019). In Indonesia, there are a lot of Online Travel Agencies, but most notably heard are these 11 names: Traveloka, Tiket.com, Agoda, Pegipegi, Booking.com, Airbnb, Trivago, Tripadvisor, Nusatrip, Skyscanner, and Expedia.

2.2 Gender

Gender can be a tricky thing to define. In the social sciences, many quantitative research findings as well as presentations of demographics are related to participants' gender. Most often, gender is represented by a dichotomous variable with the possible responses of woman/man or female/male, although gender is not a binary variable. It is, however, rarely defined what is meant by gender. However, in most OTAs, they only use Male and Female as the different genders. According to, Men were found to play a major role in household purchases, particularly for groceries, and to be light users of coupons overall. Men also were found to purchase more online products and more food delivery services than women but to use fewer coupons. Men were, however, found to be heavy users of grocery store loyalty cards.

2.3 Location (City)

According to, a city is defined as a large or important town. In, we can see that Indonesia has 8,895 prominent cities overall, but the biggest ten cities based on populations are Jakarta, Surabaya, Bandung, Bekasi, Tangerang, Medan, Makassar, Semarang, Palembang, and Cilacap. According to, urban areas are are classified as: large metropolitan areas if they have a population of 1.5 million or more; metropolitan areas if their population is between 500 000 and 1.5 million; medium-size urban areas if their population is between 200 000 and 500 000; and, small urban areas if their population is between 50 000 and 200 000. In recent days, Geo-positioning technology has helped firms to send mobile coupons to potential customers based on their real-time locations, which is referred to as geo-location mobile coupon targeting. Therefore we want to test whether different cities have an impact on different promotional voucher usage in an OTA.

2.4. Loyalty Status

According to the loyalty program is a marketing strategy that provides certain additional benefits for frequent consumers. Kumar and Shah (2004), have defined a loyalty program as a structured effort made by suppliers to provide incentives for loyal customers to increase commitment to customer attitudes and behavior towards offers made by suppliers. In a simple explanation, a loyalty program is a scheme that is designed for customers to remain tied to the company or brand. It is much cheaper to generate sales from people who have traded than those who have not. Existing customers who have made transactions and are satisfied are ready to receive more money for more company services. It's more profitable than potential new customers who don't necessarily want to spend money because they don't fully trust the company (Knox and Walker, 2001). According to [16], the effect of service quality and promotion to customer satisfaction and implication of customer loyalty in vehicle financing companies in Jakarta Indonesia, states that promotion has a significant effect on customer loyalty. Therefore we want to make sure whether customer loyalty has an effect on customer's tendency to use promotional vouchers.

2.5. Promotion Vouchers

Under discount promotion, by sharing a predetermined cut of the sales generated on the platform, the merchant offers a discount deal through the platform.

2.5. Hypotheses

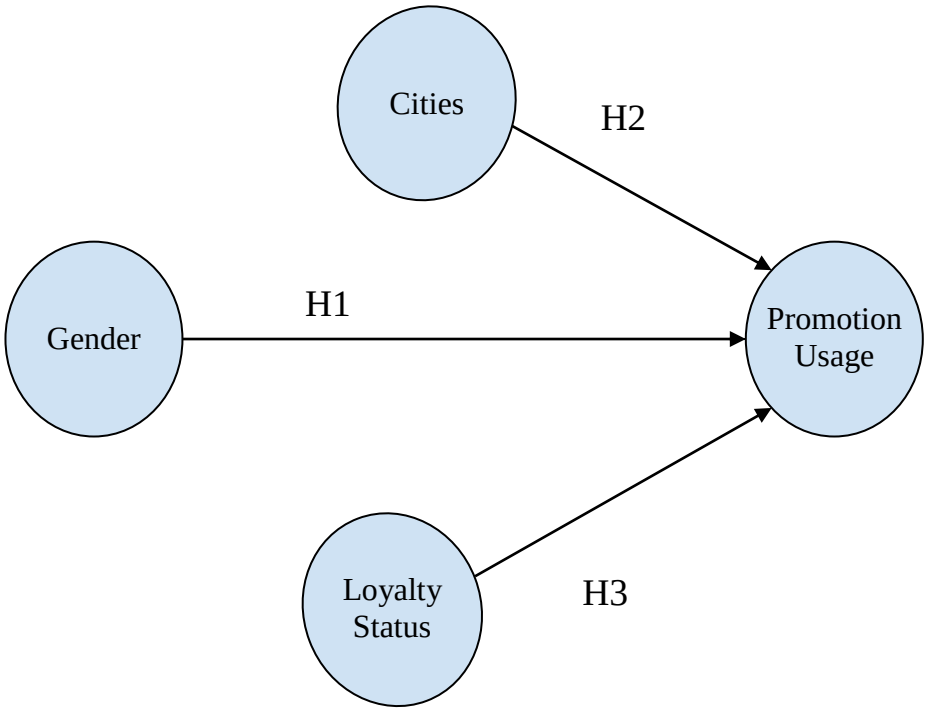

Figure 1. *Research Model*

Based on the data derived from tiket.com's database, here is the breakdown of each variable and its tiket.com's definition:

Table 1. Variables

Gender	1. Male 2. Female
City Locations	We crossmatch between the different groups of cities in terms of size, the list of cities in Indonesia, and the cities available on tiket.com's database. We decided to use two cities per group as a sample that best represents the whole data. 1. Large Metropolitan 2. Metropolitan 3. Medium-sized urban areas
Loyalty Status	Based on tiket.com's loyalty program status information at [https://www.tiket.com/rewards/info] , we can get these four different loyalty status: 1. Basic Blue (LV1/Tier1) 2. Elite Silver (LV2/Tier2) 3. Elite Gold (LV3/Tier3) 4. Elite Platinum (LV4/Tier4)

According to the literature review and the diagram above, there are three relationships that we are trying to test:

The relationship between user's gender and promotion voucher usage

H0 : User's gender has no influence of promotional voucher usage in OTA

H1: User's gender has an influence of promotional voucher usage in OTA

The relationship between user's city locations and promotion voucher usage

H0: User's city locations has no influence on promotional voucher usage in OTA

H2: User's city locations has an influence on promotional voucher usage in OTA

The relationship between user's loyalty status and promotion voucher usage

H0 : User's loyalty status has no influence on promotional voucher usage in OTA

H3: User's loyalty status has an influence on promotional voucher usage in OTA

III. Research Method

3.1 Data Collection and Methods

The hypotheses in this research are going to be tested with R Software, using statistical methodology testing. The data was collected from one of the leading Online Travel Agents in Indonesia with a total of 102,786 data points from transacting users between January 2021-December 2021. We cross matched the 95,348 data points with another database that shows each user's gender, locations(city), and loyalty status. The results of the cross matching and further cleansing process for more accurate research eventually produced 50,227 data points that showed each user's gender, locations(city), loyalty status, and transaction information.

3.2 Data Formatting, Sampling, and Cleansing

The next step was to do data formatting. Data formatting is a process where we format and segment our data into groups of interest. In this case, our groups of interest are gender, location (city), and loyalty status. Within each group, we then do a random data sampling. Each of the group gets a random 300 data points that best represents each of the group. The next step was to remove outliers from each data group. In order to remove the outlier, we use the Interquartile range method, finding the data points within the range by subtracting the Q1 with 1.5IQR, and adding the Q3 with 1.5IQR. The ones outside the range were considered outliers.

```
Q <- quantile(dataSampleMegapolitan$sum_promo, probs=c(.25, .75), na.rm = FALSE)
iqr <- IQR(dataSampleMegapolitan$sum_promo)
FinalDataMegapolitan<- subset(dataSampleMegapolitan, dataSampleMegapolitan$sum_promo
> (Q[1] - 1.5*iqr) & dataSampleMegapolitan$sum_promo < (Q[2]+1.5*iqr))
```

Figure 2. *R interquartile formula to exclude outliers*

3.3 Statistical Testing

Before conducting any statistical testing, we first did a normality test by using the Shapiro-Wilk method on each group sample. According to this journal [18], the Shapiro-Wilk method is dedicated to checking normality with known mean value μ0, i.e. to testing the hypothesis H0 : X ∼ N μ0, σ2 , where X is the random variable of interest. In this case, our X is the IDR (Rp) amount of promotion usage of each user. This function is used to conduct Shapiro-Wilk test across all datasets :

```
shapiro.test(FinalDataMegapolitan$sum_promo)
shapiro.test(FinalDataMetropolitan$sum_promo)
shapiro.test(FinalDataMediumSized$sum_promo)
shapiro.test(FinalDataMale$sum_promo)
shapiro.test(FinalDataFemale$sum_promo)
shapiro.test(FinalDataTier1$sum_promo)
shapiro.test(FinalDataTier2$sum_promo)
shapiro.test(FinalDataTier3$sum_promo)
shapiro.test(FinalDataTier4$sum_promo)
```

Figure 3. *R Code Shapiro Wilk Test*

The result of the normality test showed that all of the samples were NOT normally distributed. The p-value derived from the test were all less than 0.05, indicating that t-test can't and shouldn't be used.

```
        Shapiro-Wilk normality test

data:  FinalDataMegapolitan$sum_promo
W = 0.81501, p-value < 2.2e-16


        Shapiro-Wilk normality test

data:  FinalDataMetropolitan$sum_promo
W = 0.8286, p-value < 2.2e-16


        Shapiro-Wilk normality test

data:  FinalDataMediumSized$sum_promo
W = 0.86875, p-value = 2.636e-14


        Shapiro-Wilk normality test

data:  FinalDataMale$sum_promo
W = 0.80695, p-value < 2.2e-16


        Shapiro-Wilk normality test

data:  FinalDataFemale$sum_promo
W = 0.88107, p-value = 9.994e-14


        Shapiro-Wilk normality test

data:  FinalDataTier1$sum_promo
W = 0.89655, p-value = 5.801e-13


        Shapiro-Wilk normality test

data:  FinalDataTier2$sum_promo
W = 0.90912, p-value = 5.613e-12


        Shapiro-Wilk normality test

data:  FinalDataTier3$sum_promo
W = 0.89723, p-value = 8.31e-13


        Shapiro-Wilk normality test

data:  FinalDataTier4$sum_promo
W = 0.90693, p-value = 4.845e-12
```

Figure 4. *R Shapiro Wilk Test Result*

Knowing that all the data were not normally distributed, we decided to conduct the Kruskal–Wallis test instead. According to [19] this test is useful as a general nonparametric test for comparing more than two independent samples. From this test we found variables that are statistically significant, and some that are not. The results as follow:

```
        Kruskal-Wallis rank sum test

data:  sum_promo by gender
Kruskal-Wallis chi-squared = 1.2209, df = 1, p-value = 0.2692


        Kruskal-Wallis rank sum test

data:  sum_promo by type
Kruskal-Wallis chi-squared = 5.631, df = 2, p-value = 0.05988


        Kruskal-Wallis rank sum test

data:  sum_promo by tier
Kruskal-Wallis chi-squared = 383.91, df = 3, p-value < 2.2e-16
```

Figure 5. *R Code Kruskal Wallis Test Result*

Those variables that are statistically significant (Loyalty status) from Kruskal-Wallis test were then brought for another test, which was the test. As seen on this [20], the Conover-Iman test may be understood as a test for median difference. The results as follow:

```
                              Comparison of x by group
                                   (No adjustment)
Col Mean-|
Row Mean |        LV1        LV2        LV3
---------+---------------------------------
     LV2 |  -8.269490
         |    0.0000*
         |
     LV3 |  -15.15972  -6.892910
         |    0.0000*    0.0000*
         |
     LV4 |  -23.15852  -14.89266  -7.997978
         |    0.0000*    0.0000*    0.0000*

alpha = 0.05
Reject Ho if p <= alpha/2
```

Figure 6. *R Code Conover-Iman Test*

From the image above we can see once more, there are those variables that are statistically significant, and some that are not.

IV. Result and Discussion

Table 2. Hypothesis Testing Result

Hypothesis	**Final P-Value**	**Conclusion**
H0 : User's gender has no influence of promotional voucher usage in OTA H1: User's gender has an influence of promotional voucher usage in OTA	0.2692 (P-value >0.05)	Failed to Reject Null Hypothesis

H0: User's city locations has no influence on promotional voucher usage in an Online Travel Agent H2: User's city locations has an influence on promotional voucher usage in an Online Travel Agent	0.06 (P-Value >0.05)	Failed to Reject Null Hypothesis
H0: User's loyalty status has no influence on promotional voucher usage in an Online Travel Agent H3: User's loyalty status has an influence on promotional voucher usage in an Online Travel Agent	0.00 (P-Value < 0.05)	Reject Null Hypothesis

The results show that both Gender and Locations (City) don't influence customer's tendency to use promotion vouchers. The only variable that has an influence on a customer's tendency to use a promotion voucher is the user's loyalty status based on Kruskal Wallis test. Then th loyalty variable is further tested based on the Conover-Iman test (Figure 6.) The user's loyalty status, whether they are Basic Blue (Tier 1), Elite Silver (Tier 2), Elite Gold (Tier 3), and Elite Platinum (Tier 4) , each of them are significant and has an effect on the use of a promotion voucher. Let's take a look at this table below:

Table 3. Segment and Promo Usage Median

	segment	promo_usage_median
1	Female	191684.0
2	Male	187891.0
3	Megapolitan	153881.0
4	Metropolitan	184621.0
5	Medium Sized	150000.0
6	Tier1	89236.5
7	Tier2	168736.5
8	Tier3	304521.0
9	Tier4	622055.0

The table further shows that the higher your loyalty status is (tier 4), the higher the tendency to use a promotion voucher is, as we can see that the spending on promotion is higher on tier 4 compared to the tiers below it. The more loyal the user is, the higher promo coupon the OTA needs to spend on them.

V. Conclusion

The results of the statistical analysis and testing shows that Gender doesn't have any influence on promotional usage in an Online Travel Agent; whether you are female or male will not influence your desire to use a promotional voucher. In this modern era, there is a perception going around that says how females tend to be lured by promotions. This is definitely not approved according to this research, at least for the Online Travel Agent industry. The second variable that we tested was locations (city). User's locations, whether you live in a large metropolitan city, metropolitan city, or medium-sized urban area will not influence your tendency to use promotional vouchers in an Online Travel Agent. The last variable is the user's loyalty status. Unlike the first two variables, Loyalty status seems to influence user's tendency to use promotional vouchers in an Online Travel Agent. With this journal, we got to learn that Online Travel Agents need to pay more attention on how to get customers to have higher loyalty program status.

However, these tests that we conducted were statistically or not statistically significant on 95% confidence interval level. If we change the confidence interval level to 94%, the results might have come up differently. Another limitation of this study is the fact that these data were derived from the year of Covid-19 pandemic, which might show biased behavior from the Online Travel Agent's customer base. Future research might need to be conducted to validate the results that came out of this study. Despite the limitations, this study might be beneficial for Online Travel Agents out there to know at least which type of variables are needed to look out for when they give out promotional vouchers.

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