

## DETERMINANTS OF CUSTOMER LOYALTY FOR LIQUID PETROLEUM GAS (LPG) AND BIO-CNG PRODUCTS: A CASE STUDY IN WEST NUSA TENGGARA

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**Abstract:** One of the new renewable energy that can replace Liquid Petroleum Gas (LPG) is by maximizing the utilization of Biogas which modifies it to become Bio-Compressed Natural Gas or Bio-CNG on a commercial scale, especially for cooking. This study aims to answer two main objectives. The first is to find out the loyalty of LPG customers, the level of interest in Bio-CNG products to commercial sector business actors, and the second is to find out market testing that is influenced by price, product quality, and service quality on interest in buying Bio-CNG. The research was conducted from January to March 2022. The data collected in this study were primary data obtained from an Indonesian-language questionnaire survey which was distributed via the Google form link using the Ordinal scale. The sampling method (respondents) used was purposive sampling. Data is processed and analyzed using Logistic Regression Analysis. The research results obtained 100 respondents and showed that all variables had a significant influence on Horeka's interest in switching to using Bio-CNG. This research provides an overview and insight into the factors that influence the interest in buying Bio-CNG products among hospitality businesses. This research provides an overview and insight into the factors that influence the interest in buying Bio-CNG products among hospitality businesses. As consumers or in this research, hospitality business actors, they want to get good service from providers or sellers of Bio-CNG fuel products. As a provider of Bio-CNG fuel products, of course, you have to think about the quality of its service to hospitality businesses.

**Keywords:** Bio-CNG, customer loyalty, market tests

**Abstrak:** Salah satu energi baru terbarukan yang dapat menggantikan Liquid Petroleum Gas (LPG) adalah dengan memaksimalkan pemanfaatan Biogas yang memodifikasinya menjadi Bio-Compressed Natural Gas atau Bio-CNG dalam skala komersial khususnya untuk memasak. Penelitian ini bertujuan menjawab dua tujuan utama. Pertama untuk mengetahui loyalitas pelanggan LPG, tingkat ketertarikan produk Bio-CNG pada pelaku usaha sector komersial dan Kedua untuk mengetahui pengujian pasar yang dipengaruhi oleh harga, kualitas produk, dan kualitas pelayanan terhadap minat beli Bio-CNG. Penelitian dilakukan pada bulan Januari sampai Maret 2022. Data yang dikumpulkan dalam penelitian ini adalah data primer yang diperoleh dari survei kuesioner berbahasa Indonesia yang disebarakan melalui link google form menggunakan skala Ordinal. Metode pengambilan sampel (responden) yang digunakan adalah purposive sampling. Data diolah dan dianalisis menggunakan Analisis Regresi Logistik. Hasil penelitian memperoleh 100 responden dan menunjukkan bahwa seluruh variabel memberikan pengaruh signifikan terhadap minat Horeka untuk beralih menggunakan Bio-CNG. Penelitian ini memberikan gambaran dan wawasan mengenai faktor-faktor yang memengaruhi minat beli produk Bio-CNG pada pelaku usaha horeka. Penelitian ini memberikan gambaran dan wawasan mengenai faktor-faktor yang memengaruhi minat beli produk Bio-CNG pada pelaku usaha horeka. Sebagai konsumen atau dalam penelitian ini pelaku usaha horeka, maka ingin mendapatkan pelayanan atau service yang baik dari penyedia atau penjual produk bahan bakar Bio-CNG. Sebagai penyedia produk bahan bakar Bio-CNG tentunya harus memikirkan mengenai kualitas pelayanannya kepada pelaku usaha horeka.

**Kata kunci:** Bio-CNG, loyalitas pelanggan, uji pasar

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## INTRODUCTION

The issue of energy conversion from Liquid Petroleum Gas (LPG) to other alternative energy has begun to be planned in view of the increasingly scarce availability of LPG, fluctuating prices due to increasing demand and environmental issues. Most of the energy demand in the commercial sector, which consists of offices, hotels, restaurants, hospitals and other services, still uses LPG, which is 22% of the total energy demand in the commercial sector (compared to the domination of electricity by 60-70% for air conditioning, pumps and lighting). LPG in the commercial sector is used for cooking, especially in hotels and restaurants.

LPG demand in Indonesia has continued to increase in the last ten years from 2009 to 2019, LPG consumption grew 10.5% per year from 2.86 million tons to 7.76 million tons and it is estimated that LPG consumption in 2024 will soar to 11.98 million tons from 8.81 million tons in 2020. Along with this increased growth, domestic production is only able to reach 2 million tons per year so that 6.8 million tons of LPG needs are still imported. This of course greatly affected the country's foreign exchange and affected the price of LPG to fluctuate. The need for LPG production which is still imported is also caused by non-renewable fossil raw materials, so alternative energy is needed as a substitute for LPG which is renewable energy in the country.

One of the new renewable energies as a substitute for LPG is the use of modified biogas packaging into Bio-Compressed Natural Gas or Bio-CNG on a commercial scale as transportation and cooking fuel. Bio-CNG is classified as a renewable energy which is still new and not much is known about its benefits to the public, so that the community and commercial sector business actors, especially Horeka, are not very familiar with Bio-CNG fuel. One of the agricultural wastes to be used as Biogas which is then processed into Bio-CNG is sourced from corncob waste. The abundant corncob waste has the potential to cause environmental pollution, so it is necessary to handle waste that the community can benefit from. One of them is by converting corncobs into biogas. Corn plant waste that is not used after the cobs or fruit is picked which consists of corn cobs and husks (Regional Agronomist, 2007), can also be lignocellulosic biomass which consists of several constituent components, namely lignin, cellulose, and hemicellulose. As lignocellulosic biomass, corn plant

waste consists of 7-8% lignin, 35-40% cellulose and 17-35% hemicellulose (Cheng et al. 2010).

Mataram city is the capital of West Nusa Tenggara (NTB) which has six sub-districts, namely Ampenan, Cakranegara, Matara, Sandubaya, Sekarbela and Selaparang sub-districts. The island of Lombok with the city center of Mataram is a place famous for its exotic natural attractions such as Senggigi Beach, Gili Trawangan, Kuta Beach, Ampenan Beach and Mount Rinjani. In Mataram there are also famous cultural attractions such as Mayura Park, Ampenan Old City, and the NTB State Museum. In addition to nature tourism and cultural tourism, Mataram serves Lombok specialties such as Taliwang Chicken, Plecing Kangkung, and Sate Rembiga which can be enjoyed by tourists so that many people build business activities in Mataram City, either in the form of restaurants, hotels, and Café/eatery (Horeka). With many Horeka businesses continuing to experience growth, the need for new, renewable energy that is environmentally friendly and emission free is urgently needed to provide it to help the climate and sustainability of NTB as a tourist destination whose air, soil and water are sustainably maintained.

West Nusa Tenggara / NTB is a province in the western part of Indonesia which has 10 districts and 2 cities including the city of Mataram as the capital of NTB. Apart from being a tourist destination, NTB is also a corn-producing area in eastern Indonesia with a harvested area of 212.5 thousand hectares and produces 0.91 corn and corn cobs. Therefore, the use of Biogas or Bio-CNG is necessary for the sustainability of NTB in accordance with the characteristics of Bio-CNG obtained from corn waste as a form of concern for the environment to minimize waste or what is known as Zero Waste and at the same time plays an active role in the implementation of renewable energy.

The use of biogas from corncob waste to become Bio-CNG for LPG alternative fuel in the commercial sector, especially horeka, is still relatively new and is still in the introduction stage to the public, especially in this study in the city of Mataram, NTB. The development of bio-CNG on a commercial scale still requires a market study in the NTB region so that further implementation of technical, trade and economic development can begin. To encourage the use of Bio-CNG as an alternative, it must be ascertained beforehand the level

of loyalty of LPG consumers to commercial business actors in the City of Mataram, NTB whether it can be replaced with Bio-CNG or not, then it is necessary to measure the level of interest of commercial business actors in substituting LPG into Bio-CNG by measuring the market test of Bio-CNG. The objectives of this study are to analyze the loyalty of LPG customers to commercial sector business actors, and the level of interest in Bio-CNG products as LPG substitution fuel for commercial sector business actors, and analyze the market test that is influenced by price, product quality, and service quality on interest in buying Bio-CNG.

## METHODS

This research was conducted from January 2022 to March 2022 by taking a sample of customers at Mataram City by distributing online questionnaires, namely the Google form to Horeka business actors. The population in this study are customers of Bio-CNG for Horeka at Mataram City, namely 365 hospitality business actors. Sampling was done by purposive sampling technique. For the research sample size, the Slovin formula can be used (Husein Umar, 2008) as follows:

$$n = \frac{N}{1+N(e)^2}$$

Information: n (Number of samples); N (Total Population); e<sup>2</sup> (Defined error rate or 10% or 0.1)

With the formula the results can be obtained 99.7 or 100 respondents. This study uses 31 indicators that can be measured by technical logistic regression analysis. Data collection was carried out in this study using primary data (offline questionnaires or in-person interviews) with a Likert scale and secondary data (Library research). In collecting primary data, questionnaires were distributed to Horeka business actors. The data that has been collected is then analyzed using a data collection instrument test in the form of a Validity and Reliability Test. Then the data is processed using descriptive analysis method and Logistic Regression analysis method. The logistic regression analysis used in this study is non-metric in the dependent variable, while the independent variable is a mixture of continuous (metric data) and categorical (non-metric) variables. Because there is a mixture of scales on the independent variables, the multivariate normal distribution assumption cannot be fulfilled.

Logistic analysis is used to analyze quantitative data that reflects two choices or commonly called binary logistic regression (Ghozali, 2011). Logistic regression aims to test whether the probability of occurrence of the dependent variable can be predicted with the independent variable (Ghozali, 2011). This analysis was carried out with the help of the SPSS program.

Research on customer loyalty analysis for LPG products and Bio-CNG market tests has yet to be found, but based on a literature review, new renewable energy is needed, especially for operational fuels for the Horeka commercial industry which can substitute LPG fuel which has fluctuating prices, low availability. does not guarantee environmental friendly issues that are no better than Bio-CNG. In this regard, this study will examine the variables that influence the use of LPG fuel and test the Bio-CNG market from Horeka business actors. The framework of this research can be seen in Figure 1.

Research on Bio-CNG for the use of alternative Horeka fuels is considered not much done. The relationship between the effect of price, product quality and service quality on Bio-CNG products has also not been found much. However, there are several previous studies which can be relevant references for this research, according to Dwi & Novio in their research entitled Techno-Economic Utilization of Corn Waste-Based Biogas for Power Generation, Boiler Fuel and Bio-CNG (2019), Utilization of Biogas for Bio-CNG is feasible, but must still consider constraints from other aspects such as technical aspects and product marketing aspects because apart from investing in Biogas, investment to become Bio-CNG that can be distributed to customers requires additional equipment in the form of cylinders/ converter kits.

From the background and phenomena described, Research on Bio-CNG for the use of alternative Horeka fuels is considered not much done. The relationship between the effect of price, product quality, and service quality on Bio-CNG products has also not been found much. The hypothesis (Figure 1) proposed in this study is as follows:

- H1 : Customer Loyalty of LPG fuel has a significant effect on Purchase Intention
- H2 : Market Test for Bio-CNG fuel has a significant effect on Purchase Intention
- H3: The price of Bio-CNG fuel consumption has a significant effect on Purchase Intention

- H4: Service quality on Bio-CNG fuel consumption has a significant effect on Purchase Intention  
 H5: Service Quality on Bio-CNG fuel consumption has a significant effect on Purchase Intention

## RESULTS

### Respondent Characteristic

From the respondent's data regarding hospitality knowledge of Bio-CNG in this study, there were 7 (7%) hospitality workers who knew of Bio-CNG. While 93 (93%) other horeka did not know about the existence of Bio-CNG. The current use of horeka fuel shows that 0 (0%) horeka use Bio-CNG, 0 (0%) horeka use CNG. While 100 (100%) horeka use LPG. Respondent data regarding the type of horeka in this study shows that there are 3 (three) forms of business in the study area, namely hotels, restaurants and cafes. Of the 100 respondents in this study, 21 (21%) were hotels, 21 (21%) were restaurants, and 58 (58%) were cafes. Respondent data in this study explained the size of LPG gas usage, which showed that 12 (12%)

horeka used 12 kg LPG cylinder size, while 88 (88%) other horeka used 50 kg LPG size. Respondent data in this study describes the use of LPG per week for horekas, which shows that there are 1 (1%) horeka spending 100 kg of LPG per week, 19 (19%) horeka spending 100 Kg-750 Kg per week and as many as 80 (80%) caterers who spend more than 750 Kg per week. Respondent data in the category of horeka operating hours during weekdays or weekdays which shows that there are 2 (2%) horeka who have operating hours of less than 8 hours per day, 47 (47%) horeka who have operating hours of 8-12 hours per day, and 51 (51%) have operating hours of more than 12 hours per day. Respondent data in the category regarding horeka operating hours during holidays or weekends which shows that there are 2 (2%) horeka that have operating hours of less than 8 hours per day, 54 (54%) horeka that have operating hours of 8-12 hours per day and 44 (44%) horeka that have operating hours of more than 12 hours per day. In the category regarding the purchase price of LPG, which shows as many as 31 (31%) horeka buy LPG with a maximum price of Rp180,000.00, while 69 (69%) horeka bought LPG at a price of more than Rp180,000.00.

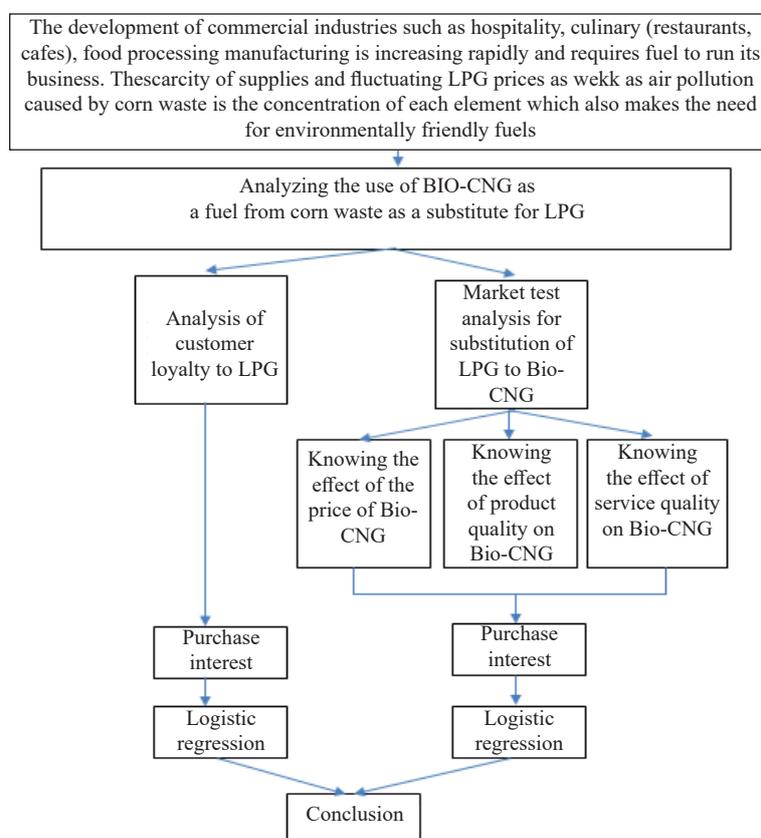


Figure 1. Study Framework

### Reliability Test

The reliability test is carried out by calculating the Cronbach's alpha value where when the Cronbach's alpha value > R table alpha is >0.7 (Titus dan Hubeis, 2016), it is said that the instrument is reliable or consistent and can be relied upon if repeated measurements are carried out.

In the Table 1 it can be seen that the Cronbach's alpha X1 is not fulfilling the criteria and should be excluded from the analysis, but value for each variable is greater than the Rtable value of >0.7 with df = 98, namely 0.1966. This can be said to be the instrument used to measure each reliable variable.

### Assessment of the Overall Model (Overall Model Fit)

Assessment of the entire model is carried out by comparing the value between -2 Log Likelihood (-2LL) at the beginning (Block Number = 0), where the model only includes constants with -2 Log Likelihood (-2LL) at the end (Block Number = 1), where the model Enter constants and independent variables (Ghozali, 2011).

Table 2 is Iteration History 0 which is - 2 initial Log Likelihood. This table will be compared with Table 3, namely the Iteration History 1 table which is the final - 2 Log Likelihoods. The difference between the initial - 2 Log Likelihood and the final 2 Log Likelihood indicates the null hypothesis (H0) cannot be rejected and the model is fit with the data.

Based on the results of SPSS 24 processing in Table 3, it shows that the initial 2 Log Likelihood value (History table 0) is 145.254, with N = 100 and DF = N - 1 = 100 - 1 = 99. Chi-square in Table DF 99 and Probability 0.05 is 123.2252, mathematically, this number is significant at an alpha of 5% and means that the null hypothesis (H0) is rejected. This means that only the constants fit the data (before the independent variables were included in the regression model) (Gozali, 2015). The next step is to compare the 2 initial Log Likelihoods which show 145.254. After the independent variables are included in the regression model, the -2 Log Likelihood value in table 4.10 Iteration History 1 is 20.450. Based on this output, there was a decrease in value between the initial and final 2 Log Likelihoods of 124,804. Decreasing the value of 2 Log Likelihood means that adding independent variables to the model

can improve model fit and show a better regression model or in other words the model is hypothesized to be fit with the data.

### Regression Model Feasibility Test

The feasibility of the regression model aims to assess the suitability of the model with the data, assessed using the Hosmer and Lemeshow's Goodness of fit Test as measured by the chi square value. The significance probability obtained is then compared with the  $\alpha$  significance level of 5%.

The Hosmer and Lemeshow Test tables state the feasibility of the logistic regression model built. Where feasibility is based on a significance value > 0.05. In the Table 4 it can be seen that the significance value of the model is 0.278. This means that the logistic regression model built is feasible and acceptable.

### Regression Model Analysis

Logistic regression model analysis was carried out to determine the extent to which the profitability of the occurrence of the dependent variable can be predicted with the independent variables. Then it is necessary to do this analysis. Table 5 shows the results of the regression model coefficient analysis.

Table 1. Reliability test results

Variable	Cronbach's Alpha	R Tabel	Description
X1	0.666	0.1966	Not Reliabel
X2	0.916	0.1966	Reliabel
X3	0.733	0.1966	Reliabel
X4	0.899	0.1966	Reliabel
X5	0.835	0.1966	Reliabel
Y	0.806	0.1966	Reliabel

Tabel 2. Overall Model Fit

Iteration History Block 0			
Iteration		-2 Log likelihood	Coefficients Constant
Step 0	1	145.139	.737
	2	145.254	.773
	3	145.254	.773
	4	145.254	.773
	5	145.254	.773

Tabel 3. Overall Model Fit Block 1

Iteration	-2 Log likelihood	Iteration History Block 1				
		Constant	X2	X3	X4	X5
1	40.026	.158	-3.309	-3.334	-4.354	-3.334
2	27.389	.428	-4.664	-4.735	-4.875	-4.735
3	23.193	.858	-5.691	-5.852	-5.902	-5.852
4	21.589	1.393	-6.678	-6.993	-7.383	-6.993
5	20.936	2.003	-7.665	-8.230	-8.432	-8.230
6	20.658	2.691	-8.657	-9.608	-9.903	-9.608
7	20.537	3.468	-9.652	-11.162	-11.231	-11.162
8	20.485	4.334	-10.650	-12.894	-12.498	-12.894
9	20.464	5.267	-11.650	-14.761	-15.678	-14.761
10	20.455	6.239	-12.650	-16.704	-17.704	-16.704
11	20.452	7.227	-13.650	-18.682	-19.684	-18.682
12	20.451	8.223	-14.650	-20.673	-21.933	-20.673
13	20.451	9.222	-15.650	-22.670	-24.980	-22.670
14	20.450	10.221	-16.650	-24.669	-26.661	-24.669
15	20.450	11.221	-17.650	-26.669	-28.769	-26.669
16	20.450	12.221	-18.650	-28.669	-30.769	-28.669
17	20.450	13.221	-19.650	-30.669	-32.362	-30.669
18	20.450	14.221	-20.650	-32.669	-34.996	-32.669
19	20.450	15.221	-21.650	-34.669	-34.996	-34.669
20	20.450	16.221	-22.650	-36.669	-36.996	-36.669

Table 4. Logistic regression model feasibility test results hosmer and lemeshow test

Chi-square	Df	Sig.
9.813	8	,278

Table 5. Logistic regression analysis resultsvariables in the equation

	B	S.E.	Wald	Df	Sig.	Exp(B)
X2	16.221	.839	12.289	1	.008	.982
X3	-22.650	.422	11.674	1	.009	.000
X4	-36.669	.745	3.600	1	.005	.000
X5	40.774	.876	7.870	1	.000	1.221
Constant	1.447	.556	6.779	1	.009	4.250

Based on the Table 5, the regression model obtained is as follows:

$$Y:16,221X_2+ (-22.650)X_3 + (-36,669)X_4 + 40,774X_5$$

1. In variable X2, a coefficient value of 16.221 is obtained with a positive sign meaning that if the market test variable increases by 1 unit, then buying interest will increase by 16,221 units assuming that the other independent variables are constant.
2. In variable X3, a coefficient value of -22.650 is obtained with a negative sign meaning that if the price variable increases by 1 unit, then buying interest will decrease by 22.650 units assuming that the other independent variables are constant.
3. In variable X4, a coefficient value of -36.669 is obtained with a negative sign meaning that if the product quality variable increases by 1 unit, then buying interest will decrease by 36.669 units assuming that the other independent variables are constant.

4. In variable X5, a coefficient value of 40.774 is obtained with a positive sign meaning that if the service quality variable increases by 1 unit, then buying interest will increase by 40.774 units assuming that the other independent variables are constant.

### Coefficient of Determination

The coefficient of determination (Nagelkerke R Square) is used to determine the contribution of the independent variables to the dependent variable. The coefficient of determination in logistic regression can be seen in the Nagelkerke R Square value (Table 6). Based on the results, it shows that the Nagelkerke R Square value is 0.867. The Nagelkerke R Square value shows that 86.7% of the probability of buying interest is influenced by the independent variable, the remaining 13.3% is explained by other variables outside the research model. This value indicates that there is a strong relationship between predictors and predictions.

### Hypothesis testing

Hypothesis testing is done by comparing the significance level (sig) with the error rate = 5%. The first hypothesis states that Customer Loyalty of LPG fuel has a significant effect on Purchase Intention. The test results show that the Customer Loyalty variable has a positive regression coefficient of 16.446 with a significance level of 0.007 which is less than (5%). Based on this, it can be concluded that the customer loyalty variable has a positive effect on purchase intention or in other words H1 is supported. This is in line with another study conducted by Gusdianto and Rohman (2018) the results of the hypothesis testing conclude that brand loyalty has a significant influence on the purchase decision of Bright Gas LPG consumers in Surabaya. However, brand awareness and brand association do not have a significant influence on the purchase decision of Bright Gas LPG consumers.

Second Hypothesis Testing states that the Market Test for Bio-CNG fuel has a significant effect on Purchase Intention. The test results show that the Market Test variable has a regression coefficient of 16.221 with a significance level of 0.008 which is less than (5%). Based on this, it can be concluded that the Market Test variable has a positive effect on buying interest or in other words H2 is supported. This is in line with

another study conducted by Firdaus and Sutrisna (2017) the results of data analysis include validity, reliability, simple linear regression, the test of determination, and t-test of the influence of marketing test which comprises four dimensions of the consumer interest is seen four dimensions. Each has indicator interrelated and positive influence on consumer interest in PT. Efa Artha Utama, Jalan Binoculars, Arengka-Pekanbaru.

Testing of the third hypothesis states that the price of Bio-CNG fuel consumption has a significant effect on Purchase Intention. The test results show that the price variable has a regression coefficient of -22.650 with a significance level of 0.009 which is greater than (5%). Based on this, it can be concluded that the price variable has an effect on buying interest or in other words H3 is supported. This is in line with another study conducted by Qisthina (2020), the results showed that the variable Price partially had a positive and significant effect on Purchase Intention, indicated by the t value of 8.792 t Table of > 1.980 with a Sig. t = 0,000. And based on research from Thariq and Nurmahdi (2020), Price has a positive and significant influence on purchasing decisions for Modena Gas Cooktop, this proves that consumers want competitive prices in terms of ability, whether the price offered is in accordance with their needs and capabilities provided by the product or not.

Testing of the fourth hypothesis states that product quality on Bio-CNG fuel consumption has a significant effect on Purchase Intention. The test results show that the service quality variable has a regression coefficient of -36.669 with a significance level of 0.005 which is less than (5%). Based on this, it can be concluded that the product quality variable has a positive effect on purchase intention or in other words H4 is supported. This in line with another study conducted by Hanslim et al. (2020), the results of the study stated that there is a strong influence between perceived quality on buying interest. The results of this study also support previous research conducted by Amri and Dorajatun (2019) that product quality has a significant positive effect on the purchase decision. This means product quality increase then followed an increase in consumer purchasing decisions. This study also supports the theory according to Kotler and Keller (2009), which explains that a company can be said to have met the quality when the product or service being offered exceeds customer expectations and preferences of the customer.

Table 6. Determination test results

Model Summary		
-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
20.450a	.555	.867

Testing the fifth hypothesis states that Service Quality on Bio-CNG Fuel Consumption has a significant effect on Purchase Intention. The test results show that the service quality variable has a regression coefficient of 40.774 with a significance level of 0.000 which is less than (5%). Based on this, it can be concluded that the service quality variable has a positive effect on purchase intention or in other words H5 is supported. The results of this study also support previous research conducted by Dapas et al. (2019) The service quality affects customers interested in buying, .customers are interested in purchasing products from the Zalora online store because the online store also provides discounts and vouchers.

### Managerial Implication

This research provides an overview and insight into the factors that influence the interest in buying Bio-CNG products among hospitality businesses. Whereas the factor of customer loyalty to hospitality business actors for LPG fuel products does not always attract buying interest nowadays. It can be seen in this study that the customer loyalty variable for LPG fuel products has no significant effect in influencing hospitality businesses to buy LPG fuel products and can switch to other fuel products which are alternative LPG fuels. In this research, a market test was conducted on Bio-CNG products to find out how much hospitality business actors can switch from LPG to Bio-CNG fuel so that they can find out how interested hospitality business actors are in buying Bio-CNG fuel products. In the market test variables using marketing mix indicators such as place, product, promotion, price, people, process and physical evidence appear to play an important role in buying a new product, in this case the Bio-CNG fuel product. Price is of course the main consideration in choosing fuel to be used as fuel for hospitality business operations.

As consumers or in this research, hospitality business actors, they want to get good service from providers or sellers of Bio-CNG fuel products. As a provider of Bio-CNG fuel products, of course, you have to think about the quality of its service to hospitality

business actors, such as giving personal attention to its consumers, such as giving discounts/gifts/gimmicks/holiday greetings/hampers/rewards or other attention that will be felt by business actors. Horeka so that there is a good emotional bond between providers of Bio-CNG fuel and hospitality business actors. In addition, what is also important is that the hospitality business actor will switch from LPG fuel to Bio-CNG fuel if the product equipment capabilities are in good condition and staff service is on time (either delivery or there are technical problems). In this case Bio CNG products, there are several things that can be focused on in an effort to increase consumer buying interest, namely by creating events or sponsorships. The event can be anything related to Bio-CNG products such as a cooking competition or a food exhibition. The event can be made to be attended by Bio-CNG product segmentation, for example, a cooking competition. Apart from that, the making of this event is also intended so that print media such as newspapers can cover the news. However, sales of the newest fuel are experiencing price and quality constraints. So that the government needs new regulations or supporting regulations from the government such as separating the regulation on the selling price of gas from new and renewable energy sources.

## CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

The customer loyalty factor for LPG fuel products has the lowest average value, which is equal to 65.83% so that it can be said that the loyalty of hospitality business actors in using LPG fuel is classified as “poor”, this can be due to several factors such as fluctuating prices, the increasingly scarce availability and environmental pollution issues in the use of LPG fuel when compared to other alternative fuels that are classified as more environmentally friendly such as Bio-CNG. Whereas the market test variable for Bio-CNG fuel products significantly influences buying interest, price is the most important indicator in purchasing Bio-CNG fuel products so that business actors can switch from LPG

fuel. The location factor significantly influences the purchase of Bio-CNG fuel, especially if the agent's office is in a strategic location. The factor of people in this study being Bio-CNG officers was also not significant, especially if the officers were friendly. Furthermore, process factors are also considered "Good Enough" or do not significantly affect buying interest, especially if the delivery is on time. The price factor for Bio-CNG fuel products is cheaper, the price match with the quality offered, and price discounts significantly influence the buying interest of hospitality businesses. More expensive fuel products are a consideration in purchasing fuel.

The product quality factor (X4) of Bio-CNG fuel that can be used for the long term, tube spare parts that are not easily damaged, and guaranteed product safety significantly influence the interest in buying hospitality businesses. Meanwhile, tube sizes that can be customized, sizes that are flexible and if the product is reliable do not significantly influence buying interest. Quality of service factor (X5) for Bio-CNG fuel if the Bio-CNG provider gives personal attention to the horeka business actors in the form of gift discounts, gimmicks, holiday greetings, hampers, rewards, attention and others and if the ability of the product equipment is in good condition is an indicator which are considered to significantly influence buying interest.

### Recommendations

It is suggested that providers can convince hospitality businesses that Bio-CNG fuel products have lower prices than LPG fuel products which are increasingly volatile. In addition, convincing hospitality businesses to use Bio-CNG fuel products, in addition to guaranteed availability, is also environmentally friendly, in contrast to LPG fuel products whose availability is increasingly scarce, and also has a polluting impact on the environment. For providers who reach the market for hospitality businesses, it is advisable to invite the role of the government, the Indonesian Hotel and Restaurant Association and/or the local community to socialize the government's blue sky program in the use of more environmentally friendly Bio-CNG fuel and sustainable environmental development.

Of course, there are still many limitations in this study, so further research is needed and specifically on Bio-CNG fuel products, both for the general public and

business actors, to obtain better results. In addition, further research is needed in the future using a new model to examine other factors that influence buying interest.

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