

## Study on Identification and Projection of Tourist Visit Cycles in the 2nd PPKM Period (Aspect Study on Tourism Branding Development at Pantai 9, Bringsang Village, Sumenep Regency, East Java)

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### Abstract

*This research is a study of the projected value of revenue development from tourist destinations in the creative economy sector. The tourist destinations marketed are in the Gili Genting Islands, Pantai 9, Bringsang Village, Sumenep Regency, East Java. The step of deepening the issue of tourism development was taken as a result of the 2nd PPKM period from the Covid-19 pandemic. The 2nd PPKM period in Gili Genting Islands, Pantai 9, Bringsang Village, Sumenep Regency, East Java had a fairly serious impact on the issue of resilience in the development of the creative economy, especially in the tourism appeal section. This is due to the deficit of several strategic tourism destinations for the development of the creative economy in Gili Genting. This causes the price of the value of revenue development from tourist destinations in the creative economy sector to increase quite high compared to several other provinces in Indonesia. Therefore, local governments as policy makers have a high enough interest in maintaining the sustainability of strategic tourist destinations, especially the development of the creative economy by way of tourism branding. This research is a comparative study of the volatility of the value of income development from tourist destinations in the creative economy sector on Beach 9 before the COVID-19 pandemic and after the 2nd PPKM. The data used is time series data on the value of income development from tourist destinations, especially the creative economy sector on Pantai 9 in the period October 2018 to October 2021. The data analysis technique uses the Vector Autoregression (VAR)/Vector Error Correction Model (VECM) method with the help of EViews software. . The results of this study indicate that the existence and sustainability of the Pantai 9 tourist destination is predicted to increase significantly after the COVID-19 pandemic ends and will be better than before the COVID-19 pandemic.*

### Introduction

The fluctuation in the value of revenue development from tourist destinations in the creative economy sector can occur in an area due to extraordinary circumstances (Setiawan et al, 2014). The issue of tourism development during the 2nd PPKM period in the Gili Genting Islands, Pantai 9, Bringsang Village, Sumenep Regency, East Java is of common interest to both local residents and the local government. The Gili Genting Islands region has advantages and disadvantages when managing its creative economy development products, especially in tourism branding. It is known that the declining tourist arrivals in Gili Genting Islands, Pantai 9, Bringsang Village, Sumenep Regency, East Java is quite high when compared to several other areas in East Java Province. This is due to a deficit in tourist visits who are not allowed or prohibited from traveling during the COVID-19 pandemic. The issue of tourism development during the 2nd PPKM on Beach 9, Bringsang Village, Sumenep Regency, East Java is becoming more complex and there are almost no tourist visitors because until October 2020 the number of patients exposed to COVID-19 has increased.

The impact of COVID 19 on the economy is wider. Not only on the health side but also causes serious shocks on the economic, social, and political aspects. The value of developing income from tourist destinations in the creative economy sector is a very central issue, especially for people who rely on the tourism sector. During the COVID-19 pandemic, many economic sectors were affected and resulted in high unemployment rates, low people's purchasing power, and poverty problems. Policy makers have a high enough interest in maintaining the sustainability of strategic tourist destinations, especially the development of the creative economy that can be done with tourism branding.

This research intends to conduct a comparative study on the volatility of the value of revenue development from tourist destinations in the creative economy sector in the form of various choices of tourist destinations before the pandemic and after the 2nd PPKM was implemented. Cashin and McDermott (2002) stated that the

value of developing revenue from tourist destinations in the creative economy sector in the form of a wide selection of tourist destinations is not the only problem that the Government and the public must be aware of; however, fluctuations in food prices also have a considerable impact on the business cycle and public confidence at various income levels. Tourist visits that continue to decline are the main focus for the majority of the people there because most of them depend on the tourism sector.

This study aims to study the fluctuations in the value of income development from tourist destinations in the creative economy sector in a more measurable manner using the time series analysis method. Time series data has advantages in terms of analysis and projection so that researchers can provide a general description of the behavior of the development of the value of income development from tourist destinations in the creative economy sector. There are several methods that can be considered for making projections, including: VAR, VECM, ARIMA, ARCH and GARCH depending on the conditions of each data both in terms of stationarity and cointegration status.

Śmiech et al (2019) identified the volatility of the value of revenue development from tourist destinations in the creative economy sector using Generalized VAR and found that the volatility of the value of revenue development from tourist destinations in the creative economy sector could occur as a result of global problems and have a relationship with fluctuations in destination prices, oil tourism and other world energy markets. VAR is also able to capture natural time variations from the abundance of world oil price fluctuations. Furthermore, Abbott et al, (2009); Gilbert, (2010); Roache, (2010), explains that financial speculation is able to make fluctuations in the value of revenue development from tourist destinations in the creative economy sector increase due to the policy of restricting international trade, tightening the money supply, and others. Harvey et al, (2011) also confirm that the world energy market can also provide a shock to the value of revenue development from tourist destinations in the creative economy sector through the transmission of foreign trade policies. An in-depth study is needed regarding the supervision of creative economy development products which is an important issue in handling conditions after the implementation of the 2nd PPKM.

This study explores the issue of resilience in the development of the creative economy in the form of tourism branding. The issue of tourism development after the 2nd PPKM period will be studied through the identification of basic commodity price movements before and after the 2nd PPKM. The 2nd PPKM will be used as a shock instrument for the development of the value of revenue development from tourist destinations in the creative economy sector. And there is also an identification objective on how effective the local government is in stabilizing the price of staple food in Gili Gending Islands, Pantai 9, Bringsang Village, Sumenep Regency, East Java so that public accessibility to creative economic development can be well maintained.

### **Volatility Model**

This model is devoted to the analysis of the transmission of volatility in the tourist destinations under study. Beckmann and Czudaj (2014) argue that speculation of the big players in one tourist destination may lead to volatility spillovers to other tourist attractions that are still in the same area or close together. Gardebroek (2018) reveals that tourist destinations in the form of beaches are the main source of volatility spillover towards the creative economy sector around the coast. Hamadi et al, (2017) found significant two-way volatility spillovers between coastal tourist destinations and their surrounding souvenirs, although a stronger spillover effect was observed for food around the coast.

Two methodological approaches that are used to look at the transmission of shocks and volatility spillovers from global issues to the tourist destination market are the Multivariate Garch model (Creti, 2013; Serra, 2011; Trujillo, 2012; Zhang, 2009). Furthermore, Awartani, (2018); Batten, (2015); Chevallier, (2013); Kang, (2018); Magkonis, (2017) measured the volatility of the value of revenue development from tourist destinations in the creative economy sector by using the Volatility Spillover calculation.

## **2. RESEARCH METHODS**

### **2.1 The scope of research**

This study examines the issue of tourism development before and after the 2nd PPKM period and is carried out using quantitative research methods. Quantitative research itself emphasizes theory testing through measuring research variables using numbers and analyzing data through statistical procedures. The scope of the research is limited to tourism destination variables such as:

1. Mall
2. Outbound
3. Plantation
4. Camping Ground
5. Mountains
6. Swimming Pool
7. Playground
8. Climbing the Mountain

## 9. Beach

By using the ARIMA and VECM methods in this study, the authors hope to identify the volatility of the value of revenue development from tourist destinations in the creative economy sector in the form of various choices of tourist destinations before and after the 2nd PPKM period in Gili Gending Islands, Pantai 9, Bringsang Village, Sumenep Regency, East Java. The purpose of this identification is to obtain a conclusion on how effective the local government is in stabilizing the value of revenue development from tourist destinations in the creative economy sector in the form of various choices of tourist destinations so that public accessibility to tourism destinations for creative economy development in the form of choices of tourist destinations can be well maintained.

### 2.2. Data Types and Sources

The data used in this study is monthly time series data for the period October 2018 to October 2021. The data used is a type of secondary data in the form of the development of the value of income development from tourist destinations in the creative economy sector in the form of various tourist destinations at the tourist level which is the average price agricultural products at the City level of Sumenep, Gili Gending Beach 9 Islands, Bringsang Village, Sumenep Regency, East Java. The data is data on the value of income development from tourist destinations in the creative economy sector in the form of a wide selection of tourist destinations from one of the markets most visited by tourists, especially the Morning Market. The data was obtained from the official website of the information center for the value of income development from tourist destinations in the creative economy sector in the form of various choices of strategic tourist destinations in the city of Sumenep as well as literature studies obtained from various sources, such as books, scientific journals and the internet.

### 2.3. Data collection technique

The data collection technique in this study was carried out by collecting data on the movement of the value of income development from tourist destinations in the creative economy sector in the form of various choices of tourist destinations directly through the official website of the Sumenep Regency Ministry of Industry and Craft. creative economic development in the form of various choices of tourist destinations for the Gili Gending archipelago, Beach 9, Bringsang Village, Sumenep Regency, East Java.

### 2.4. Data analysis technique

The data analysis technique used by the researcher is the Vector Autoregression (VAR)/Vector Error Correction Model (VECM) method, depending on the condition of each data, both in terms of stationarity and cointegration status. The VAR method is used to analyze the data if the variables used are stationary and cointegrated at the level level. However, if the variables used are stationary and cointegrated in the first difference, the VECM method is used. The VAR/VECM method was chosen by researchers in order to provide a general description of the behavior of the development of the value of revenue development from tourism destinations in the creative economy sector in the form of a more measurable choice of tourist destinations on the market. The process and types of tests on the VAR/VECM method (Enders, 2014) are as follows:

#### 1) Data Stationarity Test

The data stationarity test is carried out to check whether the time series data that we use contains a unit root or not. Data that contains unit roots or is not stationary when entered into statistical processing will result in spurious regression. To test the presence or absence of a unit root in the data, the Augmented Dickey-Fuller (ADF) test is used (Ariefianto, 2012).

#### 2) Determination of Optimal Lag Length

Determination of the optimal lag in the VAR method is very necessary in order to be able to find out/capture the effect of each variable on other variables in the VAR method. Several criteria can be used to determine the optimal lag, namely: Likelihood Ratio (LR), Akaike Information Criterion (AIC), Schwarz Criterion (SC), Final Prediction Error (FPE) and Hannan-Quinn Criterion (HQ) (Juanda and Junaidi, 2012).

#### 3) Model Stability Test

The stability test of the VAR model can be done by calculating the roots of the polynomial function. If the absolute value is  $< 1$ , the VAR model is considered stable so that the Impulse Response Function (IRF) and Forecast Error Variance Decomposition (FEVD) generated are considered valid (Enders, 2014).

#### 4) Cointegration Test

Cointegration test aims to determine whether the non-stationary variables are cointegrated or not. The cointegration concept is used to see the long-term balance between the observed variables. Cointegration test can be done using the Johansen Cointegration test method. After the number of cointegrated equations has been known, the next step is the analysis of the Vector Error Correction Model (VECM) (Enders, 2014).

### 5) Vector Error Correction Model (VECM)

If the variable used in a state contains a unit root or is not stationary at the level level but is stationary in the data differentiation process, it must be tested whether the data is cointegrated or not (Firdaus, 2011). If it is cointegrated, the model used is the Vector Error Correction Model (VECM).

## 3. RESULTS AND ANALYSIS

### 3.1 Tourist Destination Projection: Playground, Mountain Climbing, and Beach

Currently, Indonesia is actually facing a serious problem in the situation of developing a creative economy in the form of various choices of tourist destinations which are the basic needs of everyone. The problem of creative economy development commodities in the form of choices of the main tourist destinations of the Indonesian people is due to the scarcity of rice or rice (Dekasari, 2018). Rice is one of the staple ingredients that is always needed in a tourist destination so it must be analyzed qualitatively and quantitatively. The rice price projection is an illustration given in this study.

This study uses 2 methods to explore projections and long-term relationships of rice prices in several tourist destinations. First, projections will be made of 9 tourist destinations which are separated in 3 figures. Look at the following figure.

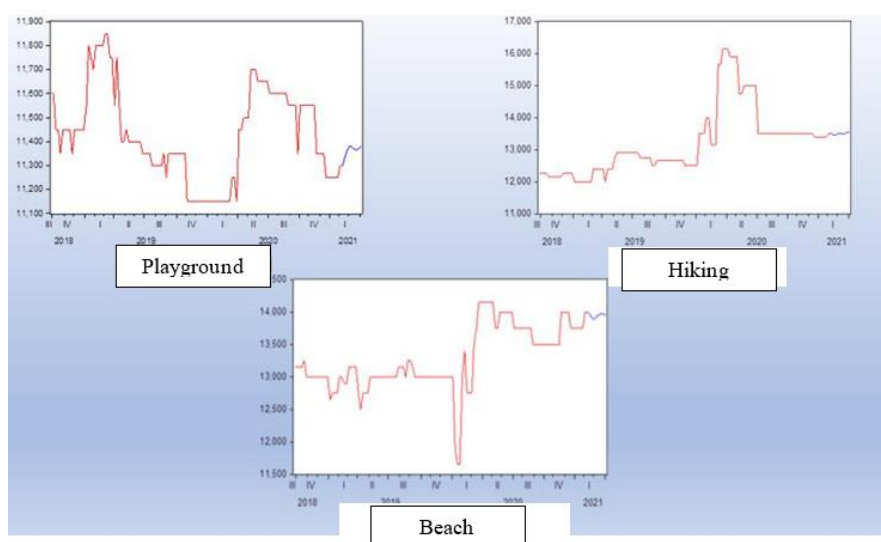


Figure 1. Price Projection Results from Playground, Mountain Climbing, and Beach

Projections are performed using the ARIMA seasonal method. The results show that the prices of several tourist destinations have increased significantly in the range of 11,332 to 11,383 Rupiah. To understand the details in more detail, consider the following table:

Table 1. Results of Price Projections for Playground, Mountain Climbing and Beach Destinations

Projection Date	Average Playground Tourism Income	Average Mountaineering Tourism Income	Average Beach Tourism Income
2/15/2021	11,332.19	13,964.10	13,458.68
2/22/2021	11,364.78	13,900.62	13,449.78
3/1/2021	11,380.04	13,887.97	13,508.08
3/8/2021	11,377.38	13,937.04	13,517.19
3/15/2021	11,368.38	13,954.03	13,482.39
3/22/2021	11,365.03	13,978.77	13,508.04
3/29/2021	11,371.36	13,955.69	13,548.87
4/5/2021	11,383.24	13,964.68	13,533.66

### 3.2. Camping Ground, Mountains and Swimming Pool Projections

The second indicator in the tourist destinations studied is the price of Camping Ground tourist destinations, Mountain tourist destinations, and Swimming Pool tourist destinations. Compared to other tourist destinations, the prices for Camping Ground tourist destinations, Mountain tourist destinations, and Swimming

Pool tourist destinations have quite high fluctuations. Because the price value of Camping Ground tourist destinations, Mountain tourist destinations, and Swimming Pool tourist destinations is strongly influenced by the distribution and availability of goods in Sumenep Regency. Look at figure 2.

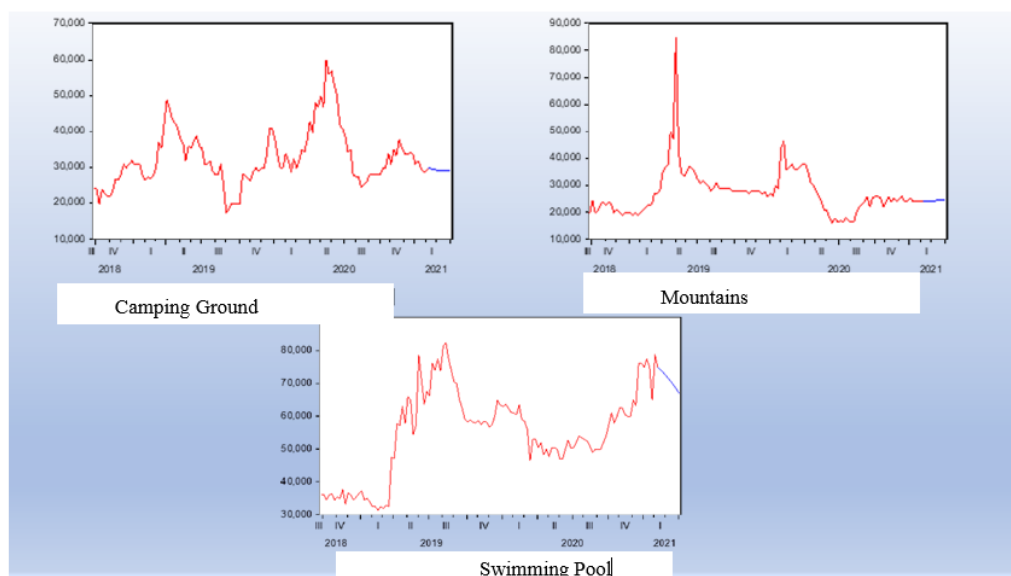


Figure 2. Results of Camping Ground, Mountain and Swimming Pool Price Projections

The red line shows the actual data while the blue line is the result of the projection of each price using ARIMA/SARIMA.

Table 2. Results of Price Projections for Camping Ground, Mountains, and Swimming Pool Tourist Destinations

Projection Date	Price of Visiting Camping Ground tourist destinations	Price of Visiting Mountains tourist destinations	Price of Visiting Swimming Pool tourist destinations
2/15/2021	29,740.51	24,145.01	74,181.19
2/22/2021	29,532.26	24,253.60	73,360.93
3/1/2021	29,372.88	24,359.26	72,459.34
3/8/2021	29,259.82	24,456.56	71,483.10
3/15/2021	29,190.33	24,547.07	70,439.19
3/22/2021	29,161.52	24,631.08	69,334.87
3/29/2021	29,170.41	24,709.05	68,177.60
4/5/2021	29,213.92	24,781.41	66,975.02

#### 4.3. Projected Value of Visits to Tourist Destinations: Camping Ground, Mountains, and Swimming Pool

The next projection is carried out on the Visit Value which consists of Camping Ground Visit Value, Mountain Visit Value, and Swimming Pool Visit Value. For the time being, the value of Camping Ground Visits, Mountain Visits Values, and Swimming Pool Visits Values tend to be stable but move in different directions. To get a clear picture, look at Figure 3.

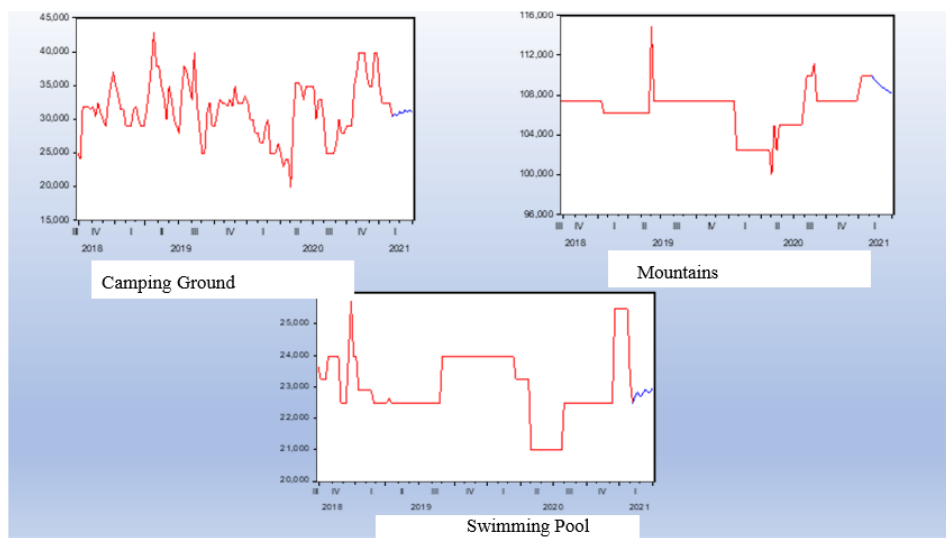


Figure 3. Results of Projected Value of Camping Ground Visits, Value of Mountain Visits, and Value of Swimming Pool Visits

The projection data shows that the three tourist destinations, both camping ground, mountains, and swimming pool, experience a change in trend where the price increase of the three tourist destinations is not too significant and tends to be stable in the next 8 weeks of observation. Look at the following table:

Table 3. Results of Projected Value of Camping Ground Visits, Value of Mountain Visits, and Value of Swimming Pool Visits

Tanggal Proyeksi	Projected Value of Camping Ground Visits	Projected Value of Mountains Visits	Projected Value of Swimming Pool Visits
2/15/2021	30,773.51	109,584.65	22,731.99
2/22/2021	30,593.03	109,362.29	22,862.55
3/1/2021	31,213.95	109,106.71	22,704.62
3/8/2021	30,905.48	108,896.78	22,800.54
3/15/2021	31,414.56	108,700.37	22,947.20
3/22/2021	31,054.14	108,526.21	22,846.31
3/29/2021	31,504.01	108,368.40	22,856.65
4/5/2021	31,126.69	108,226.66	22,982.88

#### 4.4. Analysis Results using VAR/VECM

In carrying out the VAR/VECM diagnostic test, it begins by doing a stationarity test on the 3 components of the Tourist Destination to be analyzed. This study interpolated 3 categories of data by calculating the average value of the prices of these tourist destinations. For clarity, consider the following table:

Table 4. Stationarity Test Results of the Tourist Destination Group

Travel Destinations	Category Travel Destinations	Stationarity Status
Mall	Main Tourist Destinations 1	Not stationary at Level
Outbound		
Plantation		

Camping Ground	Main Tourist Destinations 2	Not stationary at Level
Mountains		
Swimming pool		
Playground	Main Tourist Destinations 3	Stationary at Level (alpha;5%)
Mountain climbing		
Beach		

Determination of Lag Criteria is done to see the optimum effect between variables. The impact of a variable movement on other variables, but the reaction of the movement between variables sometimes cannot be felt directly, so this test can provide an illustration of how many periods it takes for a variable to react to the movement of other variables. Note the following results:

Table 5. Optimum Lag Structure Test Results

VARLagOrderSelectionCriteria

Endogenous

variables:RATADESTPLAYGROUND RATADESTPENDAKIGUNUNGRATADESTPANTAI

Exogenous variables:C

Date:07/11/21 Time:13:50

Sample:9/24/2021 07/11/2021

Included observations:115

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-3055.248	NA	2.52e+19	53.18602	53.25853	53.21508
1	-2776.550	538.0081	2.31e+17*	48.49652*	48.78295*	48.61278*
2	-2774.437	3.969200	2.61e+17	48.61629	49.11754	48.81975
3	-2771.640	5.107651	2.91e+17	48.72417	49.44024	49.01482
4	-2761.727	17.58426	2.87e+17	48.70830	49.63919	49.08614
5	-2750.130	19.96698	2.75e+17	48.66313	49.80884	49.12817
6	-2745.158	8.301606	2.96e+17	48.73318	50.09371	49.28541
7	-2738.850	10.20258	3.12e+17	48.77999	50.35535	49.41942
8	-2736.208	4.134134	3.50e+17	48.89058	50.68075	49.61720
9	-2723.686	18.94745*	3.33e+17	48.82932	50.83431	49.64313
10	-2713.011	15.59443	3.27e+17	48.80019	51.02001	49.70120

\*Indicates lag

order selected by the criterion

LR: sequential modified LR test statistic (each test at 5%

level) FPE: Final prediction error

AIC: Akaike information

criterion

SC: Schwarz information

criterion

HQ: Hannan-Quinn information

criterion

The results of the analysis show that the optimum lag can be obtained at lag 2. This shows that the prices of basic tourist destinations can influence each other and require 2 periods to influence the prices of other basic goods. Not only that, but the search is also continued to diagnose that the unit root circle is in a stable condition so that this modeling can be continued.

After passing the Stationarity Test using the Unit Root Test, the search continued on the Co-integration Test between Tourist Destinations Groups of Tourist Destinations 1,2 and 3. Cointegration is a long-term relationship that can occur between variables. This study uses the Johansen Cointegration Test at a maximum lag of 2 periods to see the long-term relationship between the prices of tourist destinations in the three groups. To see the calculation results, consider the following table:

Table 6. Cointegration Test Results Using the Johansen Method

VARLagOrderSelectionCriteria  
 Endogenous  
 variables:RATADESTPLAYGROUNGRATADESTPENDAKIGUNUNGRATADESTPANTAI  
 Exogenous variables:C  
 Date:07/11/21 Time:13:50  
 Sample:9/24/202107/11/202  
 1  
 Includedobservations:11  
 5  
 UnrestrictedCointegrationRankTest(Trace)

Hypothesized No.ofCE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None	0.117710	26.81080	29.70707	0.1056
Atmost1	0.052854	11.62601	15.49471	0.1758
Atmost2*	0.040164	5.001113	3.841466	0.0253

Tracetestindicatesno cointegrationatthe0.05level

\*denotesrejectionofthehypothesisatthe0.05level

\*\*MacKinnon-Haug-Michelis(1999)p-values

The results show that after passing 2 tests it is determined that lag 2 becomes the optimum lag in showing cointegration between variables. After conducting an initial diagnosis on the side of stationarity, cointegration and stability, the VECM model fulfills the requirements to be carried out and provides a specific description of the relationship between variables. Pay attention to the results of the impulse response function calculations below:

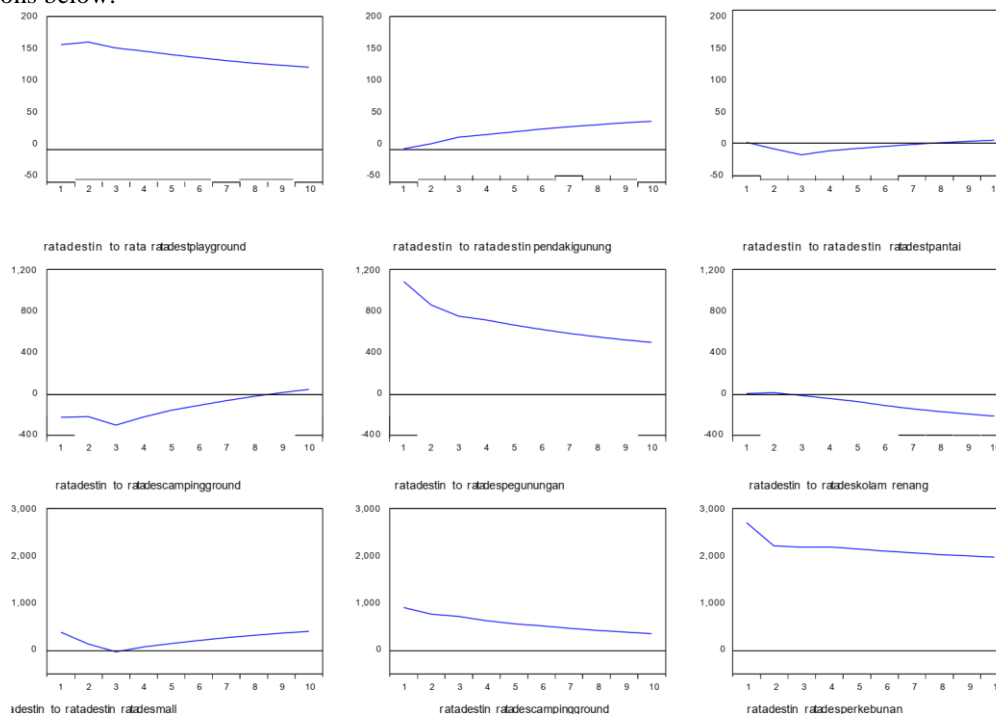


Figure 4. Results of the Impulse Response Function Price of Tourist Destinations

The results show that the shock that occurs for one creative economy development sim in the form of a wide selection of abaku tourist destinations at the prices of staple food group 1 (PlayGround, Climbing the Mountain, and Beaches) will increase the tourist destinations of group 3 (PlayGround, Climbing the Mountain, and Beaches) in second period and so on positively. The next interesting finding is the data showing that price shocks that occur in the basic commodities group 3 will cause a decrease in prices for the basic commodities in the Tourism Destinations 2 group (Camping Ground, Mountains, and Swimming pool) starting after the next 3

periods. The results also provide an interesting depiction of the relationship between Travel Destinations 1 and 2 groups where the shocks between the two do not affect each other. Furthermore, testing will be carried out on the decomposition of variance between groups of Tourism Destinations.

The results show that there is no cross-dominance of the influence of the value of income development from tourism destinations in the creative economy sector in the form of tourism branding. This means that the majority of the movement of the value of income development from tourism destinations in the creative economy sector in the form of a variety of choices of tourist destinations is caused by the movement of the tourism destination variable itself. The results of the discussion provide information about the direction of influence and the contribution of the price of each tourism destination for creative economy development in the form of tourism branding. VECM provides further information about the causal relationship that has been described using the Variance Decomposition test.

## 5. CONCLUSION

This study projects and traces the relationship between the value groups for the development of income from tourist destinations in the creative economy sector in the form of various choices of tourist destinations in the city of Sumenep. There are several methods used to produce information about the movement of tourist visits that are traded. The ARIMA/SARIMA method is used to produce a price projection for each tourist destination to be measured, while the Vector Error Correction Model (VECM) method is used to see the long-term relationship and mapping the effect of price shocks for basic commodities on tourist destinations.

The results of the study show that the prices of several important staples that support people's lives in tourist destinations are predicted to increase significantly, including rice, chicken meat, and chicken eggs. The three main ingredients in these tourist destinations are targets for creative economic development in the form of a variety of choices of tourist destinations that have increased because they have a fairly high level of fluctuation.

The results of calculations using VECM illustrate that the three groups of tourist destinations are tied to each other and have a long-term relationship. Not only that, the optimum lag for 2 periods shows that shocks in certain tourist destination groups will have an impact on the next 2 periods. The results of the analysis also illustrate that the shock that occurs for one sim of creative economy development in the form of a variety of choices of raw tourist destinations at the price of basic material group 1 (Playground, Climbing Mountains, and Beaches) will increase tourist destinations in group 3 (PlayGround, Climbing Mountains and Beaches.) in the second period and so on positively. The next interesting finding is the data showing that price shocks that occur in the basic commodities group 3 will cause a decrease in prices for the basic commodities in the Tourism Destinations 2 group (Camping Ground, Mountains, and Swimming pool) starting after the next 3 periods.

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