



**PERCEPTION DIMENSIONS OF THE USE OF ELECTRONIC PARKING IN TRADITIONAL MARKETS AS AN EFFORT TO INCREASE REGIONAL ORIGINAL INCOME**

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***Abstract***

*Electronic parking is one of the public service innovations that has the potential to increase local revenue in Ponorogo Regency. This innovation takes the form of an application that regulates parking in market areas that tend to be congested by utilizing technology such as parking sensors and applications, drivers can easily find available parking spaces and make payments electronically and also manually. The phenomenon in market parking management research is that it is not yet optimal in terms of service to the community and maximizing regional income from the market parking levy sector. This research aims to examine the dimensions of public perception regarding the use of market electronic parking as a strategy to increase Regional Original Income and evaluate user perceptions of the trust and economic benefits of electronic parking at Tonatan Market, Ponorogo. This research uses a method with a qualitative approach. The data collection technique uses an interactive approach using triangulation techniques such as observation, interviews, questionnaires and document retrieval. Samples were taken from Tonathan market parking users totaling seven informants. The research results show that there are people who support and do not support electronic parking innovation. The Department of Trade, Cooperatives and Micro Enterprises of Ponorogo Regency also supports the innovation of electronic parking because it can increase regional income.*

**Keywords:** *perception dimensions, electronic parking innovation, regional original income*

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## INTRODUCTION

The electronic parking has greatly changed the parking situation in urban areas. In the age of modern technology, conventional parking has been changing into electronic parking systems which use automated sensors, mobile apps and other technologies to efficiently manage and monitor parking spaces. The introduction of electronic parking shows how this technology not only improves user convenience by making parking spaces easier to find, but also increases the effective use of parking spaces.

The developing of parking electronic system not only reduces the time to find an available parking space, but also optimises onsite revenue by collecting parking fees in a more structured and transparent manner. In addition, e-parking also offers environmental benefits as users have direct access to available parking spaces, reducing air pollution and resulting traffic congestion.

The system also reflects that e-parking is a step towards a smarter and more sustainable urban society that utilises technology to improve the efficiency of urban resource management. As more cities adopt this technology, e-parking is not only a practical solution but also symbolises the digital transformation of urban infrastructure around the world.

In 2023, the Constitution of the Republic of Indonesia (UUD RI) in the context of the Regional Regulation (Perda) on parking

in Ponorogo city recently came into the public spotlight. Basically, the Indonesian Constitution is the highest legal foundation that regulates the basic principles of the state and the rights and obligations of citizens. The regent regulation on the amendment of Ponorogo regent regulation number 27 of 2022 on the amendment of retribution rates for special parking spaces. Structure and amount of retribution tariff for special parking spaces: Bicycle IDR1,000.00 per vehicle unit, motorcycle IDR2,000.00 per vehicle unit, sedan, jeep, minibus, pick up, and similar vehicles IDR4,000.00 per vehicle unit, bus, truck and other similar large vehicles IDR10,000.00 per vehicle unit.

The Ponorogo district government in the market parking levy has not been optimal and maximum because there are several phenomena that can affect the dimensions of public perception of the implementation of parking usage with the many practices of illegal levies being one of the phenomena that affect local revenue. Previous research that supports this study regarding parking levy has not been maximally explained based on the attitude towards socialisation, not getting a good response from the community. In addition, seen from the purpose of the programme is still less effective, the implementation is not optimal because there are still some parking attendants who do not operate the equipment in the field as well as public awareness is still lacking, people are

reluctant to pay the tariffs charged. Other obstacles faced by implementation of retribution policy are Tonatan market parking users only want to pay what they are asked to pay by the parking attendant. There is no price benchmark on the parking levy. With the newcomers, they do not know what the benchmark parking price is in Ponorogo district because most of them do not provide valid receipts (parking tickets) to be given to parking users.

By paying attention to many phenomena, the local government of Ponorogo District can design effective communication and promotion strategies to introduce public service innovations through electronic market parking to the public. With a positive response and widespread adoption from market users, it is expected to significantly increase Local Revenue and optimise it, thus contributing to the development and improvement of public services in Ponorogo district.

From the background above, the purpose of this research is to analyze how the Ponorogo government will be able to strive in order to achieve the increase of Ponorogo's Regional Original Revenue. This research is expected to have benefits as adding insight and direct experience about the management of public roadside electronic parking in Ponorogo district by looking at the case of the effectiveness of electronic parking at Tonatan market. For readers this research try to

provide a scientific contribution and become a foothold in further research related to the management of public roadside parking. In addition, the benefits of electronic market parking are trust between residents, local authorities, and guaranteed security.

## **THEORETICAL BASIS**

### **Locally Generated Income**

Regional Original Revenue is revenue from the collection of local taxes, local levies, sources within its own territory that are levied based on local regulations in accordance with statutory regulations, PAD aims to provide authority to local governments to fund the implementation of regional autonomy in accordance with regional potential as a manifestation of decentralisation. The elements of regional revenue include Regional Original Revenue (PAD), Revenue, Transfers, local levies, and others Literature review is an activity that includes searching, reading, and reviewing research reports and library materials that contain theories relevant to the research to be carried out.

### **Market Electronic Parking**

Market electronic parking is one of the new innovations in Ponorogo that is implemented in the Tonatan market. Market electronic parking has become a modern solution to parking problems in big cities, the implementation of electronic systems not only facilitates the public with a better parking experience, but also provides significant benefits to local governments. E-parking is the

latest solution that changes the way parking spaces are managed and used in the market.

E-parking uses advanced technologies such as automated sensors and mobile apps to make it easier for users to find and reserve parking spaces directly from their devices. This not only saves you time and frustration while searching for a parking space, but also improves the overall efficiency of parking space usage.

In markets, e-parking can help expand the available parking capacity more effectively. Market managers can monitor parking usage in real time and optimise the use of spaces, thereby improving service to market visitors. There are also economic benefits from increased revenue from parking levies, which can be used to fund the maintenance of market infrastructure and improve services and facilities for visitors.

In addition, e-parking also offers environmental benefits as it reduces air pollution from vehicles looking for parking spaces. These are all steps towards a more modern, efficient and environmentally friendly market, making e-parking an important part of the transformation towards a smarter and more sustainable city.

According to Adam Smith's classical theory sees that effective allocation of human resources is the starter of economic growth, once the economy grows, new (physical) capital accumulation will immediately begin needed to keep the economy growing. In other

words, effective human resource allocation is a necessary condition for economic growth.

### **Public Perception**

Public perception is a process where a group of people who live and stay together in a certain area, have the same views, judgements, and responses to things or phenomena that occur in the surrounding environment. This community perception is about how Tonatan market visitors respond to the latest innovation of the parking system. Perception is a process in which sensory clues from relevant past experiences are organised to give us a structured and meaningful picture of a particular situation (Guidanceforal, 2019).

Public perceptions of the utilisation of electronic parking as an effort to increase local revenue can vary depending on the various aspects considered. When looking for a parking space, in terms of efficiency, people first think that electronic parking brings convenience and ease. By using sensors and applications that provide real-time slot availability information, users can save time and fuel, reduce congestion, increase productivity, and in turn increase public revenue.

Moreover, the transparency of electronic parking management is considered important by the public. Computerised systems and accurate data recording provide greater public confidence in the responsible management of parking revenue. This reduces the potential for abuse, strengthens regulatory

compliance, and ultimately supports the achievement of PAD goals.

Meanwhile, sustainability and environmental aspects are also considered. The use of technology in e-parking can reduce the use of paper and minimise the physical waste generated by traditional parking management. This is in line with the social and environmental responsibilities that are gaining increasing attention in modern society.

Furthermore, the recognition of the wider economic benefits of e-parking includes infrastructure development and improved transport services. The revenue generated from e-parking allows local governments to allocate more resources to development projects that support the overall quality of life of the community.

Overall, public awareness of the aspects of using e-parking as a tool to increase local revenue raises expectations of increased efficiency, transparency, sustainability, and economic benefits for the community and neighbourhood. By managing and successfully communicating these benefits to the public, local governments can increase support and acceptance for the use of technology to advance local finance.

## **RESEARCH METHODS**

Research method is an integral part of any systematic and planned scientific study, it includes the strategies and techniques used to

design, conduct, and analyse data in order to answer research questions. In this article, we will discuss in depth about the research methodology.

The location of this research is located at Tonatan Market, Ponorogo Regency. The author chose this location because the management of parking in the market is less effective and optimal, and there is electronic parking in Ponorogo only in the Tonatan market, besides that there is still some lack of trust from the community with the agency and vice versa in the market, as well as leaks to certain parties. Descriptive qualitative research is often conducted by means of direct observation or observation and interviews. Descriptive qualitative research method is research based on the philosophy of postpositivism used to research on natural object conditions where the researcher is the key instrument (Sugiyono, 2022).

In this article, an interview approach is also carried out with the aim of clarifying the data collection carried out with two events, namely free interviews, interviews conducted with several informants and resource persons to obtain general data. In qualitative research the role of documentation is significant. Data from documentation is useful to help display some data that may not be obtained. Some written notes and images are needed to assist in analysing research data.

### **Descriptive Qualitative Research Type**

This research uses descriptive qualitative research methods which are research based on the philosophy of postpositivism used to research on natural object conditions where the researcher is the key instrument (Sugiyono, 2022). Descriptive qualitative research is often carried out by means of observation or observation, direct interviews and documentation collection. Qualitative research is a research step that produces descriptive data in the form of writing or speech, as well as the behaviour of the people observed.

The use of qualitative research aims to gain a general understanding of social reality). Descriptive qualitative research also offers an in-depth explanation of complex phenomena in their natural context, emphasising detailed observation and in-depth analysis, this methodology explores the subjective meaning contained in the data. Through this approach, researchers can understand and describe the observed situation holistically, without limiting their findings with a rigid theoretical framework.

The advantage of descriptive qualitative research lies in its ability to present a rich and complex social reality, offering a nuanced and detailed view of the context under study. Thus, this research not only provides a rich description of the phenomenon, but also reveals hidden layers of meaning.

### **Time and Place of Research**

Time in the research context includes the temporal aspect of the observed phenomenon. The researcher chose the research time from June 2023 to July 2023, the place was at the Tonatan Market, Ponorogo Regency, where interviews were conducted with Tonatan community members managed by the Ponorogo Regency Trade and Micro Business Office (Perdagkum).

### **Research Target/Subject**

Research targets in the context of e-parking refer to the main objectives or outcomes to be achieved through the research. This can include increasing the efficiency of using the market's electronic parking system. In the study, the population was taken from visitors to the Tonatan Ponorogo market and the sample was taken from the Tonatan market user community of seven informants who met the criteria such as Tonatan market visitors and using private vehicles. The research subject is the main focus in the form of a technology system used to manage parking and also parking attendants who will operate the tool in order to implement electronic parking in the market and reduce fraud from irresponsible parties.

### **Procedure**

This research is a type of qualitative research with a descriptive skin approach with data collection procedures by interviewing, making questionnaires, direct observation and taking documentation and then processed

using qualitative descriptive methods and using Triangulation analysis. Electronic parking procedures in the market are a positive step towards improving the efficiency, safety, and experience of market visitors. With proper implementation of e-parking and good management on the part of parking attendants as well as visitors, this technology can help traditional markets face modern challenges and optimise overall parking operations in Ponorogo. Although there are challenges to overcome, the long-term benefits clearly make it worth adopting in markets across Ponorogo.

#### **Data, Instruments and Data Collection Techniques**

Electronic parking data sources include information collected from various electronic systems and devices used to manage and assist parking at various locations. One of the main sources is parking sensors installed in car parks that can detect and provide data on the availability of parking slots in real-time.

Electronic parking not only provides convenience in managing parking, but can also be a powerful instrument in improving local finance through various dimensions of its perceived use in the public market. Firstly, in terms of efficiency, the use of e-parking reduces the time spent by users in searching for available spaces. E-parking can also increase mobility and ultimately boost local economic activity. By improving affordability

and convenience, parking revenue increases due to efficient use of parking facilities.

Transparency and accountability in parking management increases public trust in local government. Through the use of electronic systems, accurate and accountable data on parking revenues can be made publicly available, minimising the risk of abuse and improving regulatory compliance.

Data collection techniques on the dimensions of the perception of the use of market electronic parking for the community as an effort to increase local revenue can be done with interactive data collection techniques such as direct observation of conditions at the Tonatan Market. Data collection techniques in the context of electronic parking are the key to obtaining accurate and useful information about the use of parking lots, parking patterns, and management efficiency in the parking system primary data used to informants, namely by interviewing Tonatan market visitors.

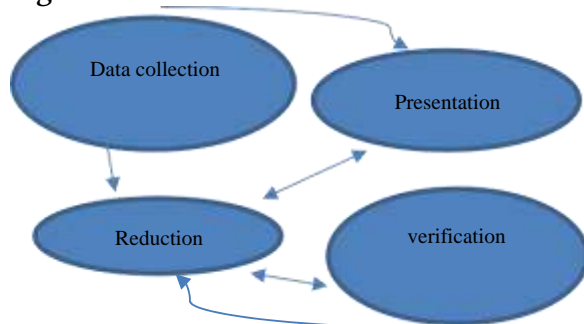
This technique can be used to obtain more detailed information from the public regarding their perceptions of the use of electronic parking. Researchers also see from characteristics such as Tonatan market visitors, using private vehicles. In addition, it also conducts documentation to add to the validity of the data.

#### **Interactive Analysis Techniques**

Data analysis techniques that can be carried out on the dimensions of the

perception of the use of market electronic parking for the community as an effort to increase the Regional Original Revenue of the Ponorogo district by means of interactive analysis conducted by researchers interviewing, providing questionnaires to documenting. Qualitative methods are considered a type of research based on the post-positivist philosophy, which involves investigating natural objects, where (as opposed to) (experiments) the researcher is the only tool, data collection is done by triangulation with inductive (Sugiyono, 2022). Triangulation analysis is the process of systematically searching and compiling data obtained from interviews, field notes, and documentation by organising data into categories, breaking it down into units, synthesising, compiling into patterns, selecting what is important and what will be studied, and making conclusions so that it is easily understood by oneself and others (Sugiyono, 2020).

Figure 1. Research Framework



Sources: Miles dan Huberman (1992)

Components of data analysis:

a. Data collection, at this stage the researcher carried out the data collection

process with interactive techniques. Researchers make observations directly to the process of using electronic parking in the market to understand in detail how the system is used by the community.

b. Data reduction

Researchers identify at this stage to carry out continuously as the research progresses. To further sharpen, classify, direct, discard unnecessary data.

c. Data Presentation

Presentation of data is a set of arranged information that gives the possibility of drawing conclusions and taking action.

d. Conclusion Drawing/Verification based on data that has been reduced and presented, researchers make conclusions that are supported by strong evidence at the data collection stage.

## RESEARCH RESULT AND DISCUSSION

Tonatan Market is a dominant traditional market selling animals located in Ponorogo city, East Java. Tonatan Ponorogo market is inhabited by traders and buyers who come from various regions around Ponorogo. The tonatan market or animal market is open every legi and Pon day at 06.00-13.00 if the other days at 08.00 until 12.00. Tonatan Market is located on Pacar Street, precisely in Tonatan District, Ponorogo District, Ponorogo Regency. Tonatan Market or animal market is a gathering place for traders and buyers to conduct buying and selling transactions of livestock which is a source of



income for breeders and traders. In addition, residents can also earn income as parking attendants at the Tonatan market which is managed by the Trade, Cooperatives and Micro Enterprises (Perdagkum) office. With the existence of parking fees resulting in a decreasing number of visitors to traditional markets along with the increasing number of shopping centres or modern stores, the local government conducts a new parking system policy electronic parking market in order to determine the quantity of visitors every day and is expected to increase the interest of citizens to shop at traditional markets because they already have trust between the local office and also the parking attendants and avoid parking extortion.

In addition, the goal is to increase Regional Original Revenue. If PAD increases, it will automatically have an impact on better market infrastructure. This also affects more income due to the income of the market itself and increases visitor interest. The research results are presented descriptively.

This research was conducted using interactive analysis techniques with triangulation data collection techniques with the first step of making direct observations at Tonatan Market by looking at the condition of the parking lot, then the researcher conducted interviews with seven informants from Tonatan market visitors by looking at characteristics such as clear Tonatan market visitors and using private vehicles, then

offered to informants whether they were willing to be interviewed after being willing then the researcher began conducting interviews. Tonatan market is the first market to make the latest innovation with an electronic parking system that started in June 2023 until now, and this will certainly make new adaptations for Tonatan market visitors with conventional and now electronic services. This is in line with statement by one of the informants named Aziz, the 1st informant said that

"In my opinion, the electronic parking system is more efficient because all data will automatically be recorded by the system, while with the manual system some people also do not know the acquisition of funds because it is not open". (01 July 2023).

This is not in line according to Guntur, the 2nd informant, who said:

"in my opinion, the service of manual parking attendants in the market is easier to find and faster, while the service of electronic parking attendants is quite complicated and long because they have to wait for parking attendants to operate the equipment". (4 July 2023).

If researchers look at the tariff between conventional and electronic parking, it is the same but the difference is that the system can be more transparent. This is in line with what was conveyed by one of the 3rd informants named Mrs Mela who said that:

"the service that makes me happy to park at the market today is electronic parking which is practical and easy, the officer also

provides a receipt for payment". (9 July 2023).

This is also in line with the opinion of the 4th informant named Bagus who said that:

"The tariff is actually appropriate, it's just that I trust electronic parking more because it is more transparent". (12 July 2023)

Each system has its own constraints and has its own advantages and disadvantages. Electronic parking has the advantage of being more transparent while the advantages of conventional are faster than the electronic system. This is in line with one of the 5th informants Tonatan market visitors named Mrs Sinta said that:

"The obstacles I have encountered when parking in the market after electronic parking, the officers are still confused when using the equipment and sometimes have problems with the internet". (10 July 2023)

With the latest innovations from Tonatan market parking, it will change old habits which usually only get receipts that are less reliable and cannot be seen online, so with this electronic parking, visitors can freely see online these visitors make transactions and there is clearly no extortion parking. For this reason, in line with the opinion of Handoko, the 6th informant said that:

"I agree with the existence of electronic parking because there are updates in the payment and input system". (12 July 2023).

According to Mr Joko, the 7th informant said that:

"I disagree with the electronic parking system because it is longer and less efficient". (20 July 2023).

The results of the analysis with interactive analysis techniques with data collection techniques triangulation of informants there are those who do not support the latest innovations of electronic parking markets and there are those who agree with several reasons such as more transparency. The first dimension of perceptions about the use of electronic parking machines is about the services of parking attendants using conventional and electronic parking, then what obstacles are faced by electronic and conventional parking and visitors agree with electronic or conventional parking. This dimension is considered the most dominant reason in considering the use of electronic parking applications, both for respondents who agree and disagree.

Respondents who disagreed. Informants who agreed that parking using an electronic system stated that it could reduce parking fraud or extortion because there was already a track record of parking vehicles. Respondents who are interested say that it is even better if it is made into one door so that more security and order are maintained and reduce the risk of losing vehicles with complete vehicles. Meanwhile, respondents who disagree say that the market is not adequate if it uses an electronic parking policy because citizens are still unfamiliar with it and

there has been no socialisation from the local office from before, besides that it also adds a long time because they have to wait for an electronic parking receipt.

No	Informant
1	Name :Zaki Age :39 years Position : Tonatan market visitors
2	Name :Guntur Age :42 years Position : Tonatan market visitors
3	Name :Mela Age :30 years Position: Tonatan market visitors
4	Name :Bagus Age :38 years Position: Tonatan market visitors
5	Name :Sinta Age :40 years Position : Tonatan market visitors
6	Name:Handoko Age :46 years Position : Tonatan market visitors
7	Name :Joko Age :50 years Position : Tonatan market visitors

Source: data processed, 2023

## CONCLUSIONS

The implementation of the e-market parking system has a far-reaching impact on the community and the village government by understanding and supporting this initiative, the community contributes to an increase in local revenue that supports sustainable and improved quality of life for all. The collected resources create a better environment for future generations. In the

perception dimension, the community thinks that the electronic system is less than optimal in its use. Factors include the fact that people are still unfamiliar with electronic parking, the internet that is not smooth can trigger obstacles during the process of issuing parking receipts. But it is inversely proportional to the opinion of the Cooperative Trade and Micro Business (Perdagkum) office, which states that it strongly agrees because it can add to the increase in local revenue by monitoring real time and can increase trust between parking attendants and the agency.

However, the successful implementation of the market electronic parking system requires adequate infrastructure support and education to the community. The local government must ensure that the sensor network and mobile application are functioning properly and provide training to the community so that they can make good use of the system.

Overall, the public perception dimension of electronic parking is very positive, resulting in an increase in local revenue through the optimisation of the parking system and strengthening the positive relationship between the local government and its citizens. This is very important to support electronic parking in Tonatan market.

## Suggestion

Electronic parking is a modern solution that can address various issues related to

parking management in traditional markets in Ponorogo. In this context, the use of e-parking technology can not only improve operational efficiency, but also has the potential to increase the local revenue of Ponorogo as well as provide a better experience for market visitors. Suggestions from the research conducted

There is a need for socialization of the market's electronic parking system so that residents of the Tonatan market can also accept easily if there is the latest innovation from the local government to make it better than before. In addition, the local government must also pay attention to a stable internet connection so that parking attendants can also easily and quickly operate the application. The government must pay attention to the development of adequate infrastructure for electronic parking in the market. Researchers argue that Tonatan market users only want their vehicles to be safe, comfortable, and a more practical system.

### **Implications and Limitations**

The implications in research on the dimensions of the perception of the use of market electronic parking for the community as an effort to increase local revenue are by increasing the effectiveness of parking management, increasing parking levy revenue with this research can assist the government in increasing PAD by optimising the use of electronic parking and local governments can

determine the right price and make policies that support the use of market electronic parking. The implementation of an electronic parking system brings several important implications that can affect both technological and social aspects of society such as operational efficiency which can increase efficiency in parking lot management.

This study has sample limitations that affect the results of the study. Time limitations can limit research to investigate phenomena in depth. Researcher limitations have certain knowledge, experience, or skills limitations that can affect data interpretation or analysis of results.

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