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Abstract. The development of Makassar City, which from year to year increasingly signals changes to the lifestyle of the community, the increased use of vehicles, and community mobilization from one place to another is parallel to the community's need for land or parking space. This has triggered the emergence of many illegal parking lots spread across Makassar especially on the side of public roads, shop fronts, offices, and others which are the leading causes of traffic jams in Makassar. The purpose of this research is to regulate parking management as a whole from all stakeholders, to change manual parking into e-parking so that it is more controlled, controlled, and transparent. This study uses the Nvivo analysis research method in a qualitative approach to explaining the problem of management of e-parking in cities with a data coding model. The data in the research were obtained through the online media of the South Sulawesi Province by selecting news about parking in Makassar. Out of the 717 parking points in Makassar, only a small proportion use e-parking. It is because the parking lot in Makassar City is not well controlled. There is no equitable management carried out by the government so that many parking attendants do illegal parking.

Keywords: *Management, E-Parking, Makassar City, Artificial Intelligent Strategy*

1. Introduction

Every big city and developing city that is the center of industrial and economic activity will always be the attraction of urbanization which causes an increase in population. This increase in population requires housing, health, education, recreation facilities, including shopping center facilities or malls; this will directly affect traffic flow. [1].

Parking is not a new phenomenon. Parking is a problem often encountered in the transportation system. Parking problems occur in big cities and developing cities. It causes congestion on the road. To deal with this problem, it is necessary to provide sufficient parking space.[2].

These problems are considered based on a deep understanding of the current situation by designing a Mobile Application (ADIP). In conclusion, we found that many people worry about parking their car when they decide to visit a particular place, especially during weekends, holidays, and even weekdays [3].

Automatic valet parking has the potential to be one of the automatic drive systems needed today. It is mainly because the following three simplifications for common self-driving car problems can make: (1) the speed is usually low, (2) the environment is closed and known in advance, and (3) the infrastructure can be equipped with system security. However, the need for high investment in infrastructure remains [4].

The development of Makassar City from year to year indicates a change in the lifestyle of the community. The aforementioned, of course also affects the increasing ownership of vehicles in Makassar, where every vehicle owner wants ease of mobilization within Makassar. Increased use of vehicles and community mobilization from one place to another parallels the community's need for land or parking spaces. In Makassar, there are at least 717 parking points spread across 14 sub-districts. The legal umbrella for parking in Makassar City is contained in Regional Regulation number 17 of 2006 concerning parking rules and the Decree of the Mayor

of Makassar number 935/S.Kep/188/2006 regarding parking problems on the edge of public roads, shop fronts, offices, and others. From the data, it is stated that the revenue from parking fees or services with dividends distributed by the Regional Regulation on parking to the Makassar City Government was Rp469 million in 2010 from the retribution received by the Regional Regulation on parking of around Rp5.6 billion. In calculation, if 1,126 Parking officers deposited a maximum of Rp50,000 times the number of Parking officers or Rp56 million times 29 days, it is estimated that it would reach more than Rp1.6 billion. That number times a year could reach Rp19.5 billion, while revenues for 2012 amounted to Rp8.6 billion. These calculations are data that are still inaccurate, and it could be that the income from the Regional Regulation on parking is more than Rp8.6 billion/year, considering that there are parking attendants who deposit more than Rp50,000. However, the high acceptance of the Regional Regulation on parking in Makassar City is not accompanied by an increase in the welfare of parking attendants who is the spearhead in increasing PAD from the parking sector. Various problems that occur in parking in Makassar City, such as consumer security, congestion caused by parking that takes the road, and high deposits to the Regional Regulation on parking, therefore requires a precise regulation in regulating the overall parking management of all stakeholders.

2. Methodology

This study uses the qualitative data analysis software (QDAS) approach of NVIVO [5]. NVIVO has been used in qualitative studies for more than 25 years [6], the use of NVIVO as an analytical tool serves to organize research data in a structured and sequential manner [7], NVIVO is a computer-based qualitative data analysis tool [8] or computer-assisted qualitative data analysis software (CAQDAS) [9]. The use of NVIVO in a qualitative approach aims to explain the management problem of e-parking management in cities with a data coding model. The data in the research were obtained through the online media of the South Sulawesi Province by selecting news about parking in Makassar. The data that has been obtained is analyzed using NVIVO through several stages such as data import, multi-level coding, data display, and data visualization [5].

3. Literature Review

1.1. Management

The definition of management is a series of processes that include planning, monitoring, and evaluation activities to empower all organizational/company resources, both human resources (human resource capital) and capital (financial) [10]. Our planning needs to revive the social democratic values which are the basis of the planning system [11]. This means paying more attention to not only the values of planning but of the values in planning [12]. Three cases were selected to represent city-based case studies on how planning can play an active economic role, the role in managing liquidity to drive development, the use of a form of public land development that prioritizes strategic bargaining with private actors, and the introduction of policy readjustment following historical use of development models public land [13].

Controlling is a management activity related to checking to determine whether the executor has been carried out following the plan, the extent to which progress has been made, and planning that has not been completed as planned. [14] Control is a specific type of action of a narrow spectrum, aimed at separate processes in an enterprise. So the bottom line: control is the more tactical tool in the company [15].

Evaluation of programs and policies designed to alleviate social injustice has become an important part of a foundation. [16] Evaluations that address health inequalities (or other discrepancies) will have little value if they do not make a difference in how people think or act. Traditionally, concerns about the consequences of evaluation have been discussed in terms of the use of evaluations. In recent years, evaluators have been encouraged to pay attention to the "evaluation effect". [17]

1.2   E-Parking

The problem in big cities is not only traffic jams, but also secure parking spaces. There are many ways to control illegal parking. Starting from pulling out the valve, towing, to dividing the vehicle parking zone. It turns out that even with such consequences, plus unsafe parking conditions, vehicle users still use illegal parking services. Artificial Intelligence is driving the industrial revolution 4.0 which promises many conveniences for the government and industrial sectors. Internet of Things (IoT) and big data are examples where AI can be implemented. This is in line with the existence of e-Parking services which are present as the latest innovative solutions to solve parking management problems and challenges for local governments.

E-Parking is a Parking Levy Management Solution for Local Governments. The use of Information Technology in the government sector as a solution to government service problems in vehicle parking services is explained at https://eparkir.id/. The e-Parking service is here as the latest innovative solution to solve parking management problems and challenges for local governments. Various facilities/features/modules in the online application are presented in the e-Parking service, help the parking management and to control its fees in local government environments to be more controlled, transparent, fast, easy, and accountable. Involving the active participation of the parking user community to help control and supervise parking management and its fees. Increasing local income from parking fees to be more controlled and maximized by involving the active contribution of the community. Improving the welfare of the parking attendants more fairly and evenly.

This e-Parking system is innovative and obtains support from the Government. The e-Parking system uses a tool to record parking fee payment transactions called Electronic Parking Terminals (TPE). [18] The use of an automatic parking system also helps car users to park in crowded areas where parking maneuvers are limited in several aspects from tight spaces to limited parking time. [19] E-Parking has also been developed to improve driver comfort and prevent collisions, calculate the desired steering angle, track the desired speed during the parking sequence. [20] Ample parking space makes driving easier. Most driving trips end in parking lots, and if parking is cheap and easy to pay for, it makes it easier for people to park. [21].

4. Result and Discussion

In Makassar, there are approximately 717 parking points spread across 14 districts, based on data from *https://eparkir.id/*. For the parking management to run optimally and evenly, it is necessary to pay attention to several indicators such as accountability, fast, easy, controllable, and transparency to improve the welfare of parking attendants, increase local revenue, and involve community participation. However, data visualization results from NVIVO show that the indicator is still in the low category. The expected optimization of parking cannot be manifested.

Figure 1. Cross Tab Result of The Parking Management
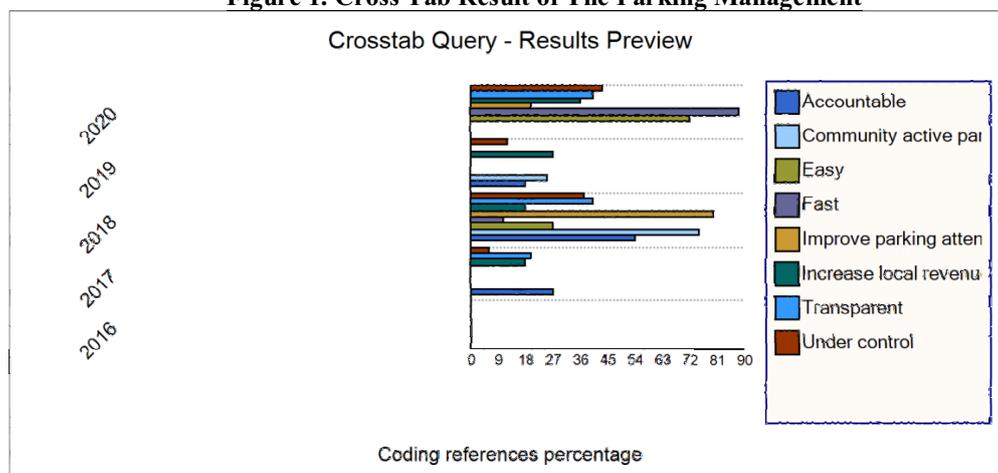
Year	Accounta bility	Speed	Improve the parking attendant's welfare	Increase Regional Original Income	Ease	Communit y Active Participatio n	Control	Transpa rency
2016	0%	0%	0%	0%	0%	0%	0%	0%
2017	37.5%	0%	0%	25%	0%	0%	12.5%	25%
2018	20.69%	3.45%	13.79%	6.9%	10.34%	10.34%	20.69%	13.79%
2019	25%	0%	0%	37.5%	0%	12.5%	25%	0%
2020	0%	25%	3.13%	12.5%	25%	0%	21.88%	12.5%
Total	**14.29%**	**11.69%**	**6.49%**	**14.29%**	**14.29%**	**5.19%**	**20.78%**	**12.99%**

The fifth indicator is ease, with 14.29%. This assessment is still classified as very low. It is caused by the lack of parking attendants' facilities such as vehicle entry and exit signs, manual payment methods that take a long time, and the absence of special instructions to detect empty parking locations.

The sixth indicator is active community participation, with a score of 5.19%. This rating is classified as very low. This is caused by the absence of space for the public to participate in parking management, such as the unavailability of a suggestion box, even though this suggestion box aims to evaluate parking attendants' performance and as a reference for improving parking services in the future.

The seventh indicator is control with 20.78%. Although this score is the highest among others, this assessment is still classified as very low. This is caused by the lack of utility to make it easier for parking attendants to regulate and control parking lots and even traffic jams.

The eighth indicator is transparency, with 12.99%. this assessment is still shallow. This is caused by the absence of clarity regarding the amount of payment for parking services that have been set by the government because the payment method is still manual, and even some do not use tickets that have been approved by the government.

The analysis results show that the low indicators are due to the lack of parking using the e-Parking system. This happens because there is no proper management regulating this parking lot; many parking attendants are doing illegal parking because the government does not control it. There is no planning, as well as supervision of this parking lot. If all parking points use e-parking, the government can monitor each existing parking point so that no one else can do illegal parking. Therefore, parking can be well controlled.

As seen in the data obtained from the observation of the e-Parking management above, it can be concluded that the implementation of e-Forecasting in Makassar still requires special attention from the government, especially in terms of planning, monitoring, and evaluation. E-Parking is a Management Solution for Electronic Parking Charges for Local Governments. Utilization of Information Technology in the government sector to solve government service problems in vehicle parking services. The e-Parking service is the latest innovative solution to solve parking management problems and challenges for local governments. Various facilities/features/modules in the online application that are presented in e-Sarking service help parking management and retribution in the local government environment is more controlled, transparent, fast, easy, and accountable. Involving active participation of parking users to help control and supervise parking management and retribution. Also increasing local income from parking fees.

5. Conclusion

Out of the 717 parking points in Makassar, only a small proportion use e-Parking. This is because the parking lot in Makassar City is not well controlled. There is no equitable management carried out by the government so there is much illegal parking. The analysis results show that the low indicators are due to the lack of parking using the e-

Parking system. This happens because there is no proper management regulating this parking lot; many parking attendants are doing illegal parking because the government does not control it. There is no planning, as well as supervision of the parking lot. In conclusion, if all parking points use e-Parking, the government might be able to monitor each existing parking point so that no one else can do illegal parking. Parking can be well controlled.

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