

Research Article

Facebook Ads, COVID-19, and Smart City Dissemination

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Abstract.

This research provides an innovative strategy to disseminate smart city programs during the pandemic through Facebook Ads. Socialization of the smart city program was hampered due to the COVID-19 pandemic. The study used the systematic literature review method from various recent journals on the use of Facebook for the dissemination of public policy information. NVivo tools, qualitatively in-depth and comprehensive analysis will explain new methods' findings in this digital age. Facebook ads were chosen because the field can target those who have an interest in smart cities. This study found that Facebook advertising as a digital platform for socializing smart city programs during the pandemic the public was more efficient in terms of time, effort, cost, and a wider target market. This study found an innovation, namely the use of Facebook advertising as a digital marketing platform in government affairs or the socialization of government programs to the public during the pandemic. Further studies could combine Facebook Ads with other platforms like Google Ads, SEO, and TikTok.

Keywords: COVID-19 Pandemic, Digital Platform, Smart City

1. Introduction

Many countries build smart cities because they refer to the projected growth of the city's population, which is estimated to reach 70% of the world's population by 2050 [1]. The challenge of maintaining a high quality of life and the pressure of national development in the form of changes in the environment, infrastructure, employment, poverty, and increasing competitiveness have also become driving factors for smart city development [2]. Even in 2030, it is estimated that as much as 100 billion dollars will be invested in smart city applications around the world [3].

Indonesia is one of the countries involved in building a smart city. Through the "Towards 100 Smart Cities" program, the government is trying to build smart cities systematically and massively in several big cities in Indonesia [4]. In the 2017-2019

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period, there have been 100 cities/regencies so the Indonesian government has met the target of 100 Smart Cities. In the next plan, the government will build more smart cities in Indonesia. In the Minister of Communication and Information Regulation No. 2/2021 concerning the Strategic Plan of the Ministry of Communication and Information 2020-2024, the Ministry of Communication and Information stated that it wants to present 150 smart cities in Indonesia by 2024.

At this time, socializing the smart city program to the public is increasingly difficult due to activity and social restrictions during the Coronavirus Disease (COVID-19) pandemic. Therefore, the government needs to develop a strategy to socialize the smart city program to the public through Facebook Advertising. Apart from the community, the government also experienced many obstacles in carrying out tasks and continuing the work program due to physical restrictions during the COVID-19 pandemic. The smart city program encountered problems during the COVID-19 pandemic. According to Hadiwiono [5], the implementation of smart cities in Indonesia during the COVID-19 pandemic is still experiencing problems. For example, the movement Towards 100 Smart Cities is experiencing infrastructure constraints. Local governments and communities are not ready to accept and utilize technology properly. The COVID-19 pandemic limits community and government activities to succeed in the smart city program. Apart from all these obstacles, there is also good news from the central and various regions' governments. When physical activities and activities outside the home are limited, people spend more time accessing the internet and social media. Facebook is a social media for disseminating smart city program information to Indonesian people. The number of active Facebook users in 2020 reached 2.6 billion and has increased massively since 15 years ago [6]. Facebook has special features for online marketing through Facebook Ads that can reach a very large audience. Facebook is a potential medium for the digital marketing of products, campaigns, and government programs. In addition, Facebook provides reports on how certain ads are performing with statistics on the number of clicks they receive and the click-through rate. Facebook Ads makes it easy for consumers and companies to distinguish the features and components of an ad or campaign [7].

Molinillo et al. [8] conducted a study to measure the involvement of residents in smart city social media. The researchers combined the variables of popularity, commitment, and virality. The analysis uses a sample of ten smart cities in Spain (Barcelona, Bilbao, Madrid, Seville, and Valencia). The smart city analyzed achieved acceptable, but rudimentary, levels of engagement through social media using Facebook, Twitter, and Instagram. Malawani et al [9] used social media Twitter for disaster management.

A collection of netizen Tweets was compiled to detect the impact of Typhoon Washi, then the results are useful for post-disaster management. The results of the analysis determine the priority of handling the victims based on the data disclosed by the netters.

Different from previous journals, this research provides an innovative idea for the development of a smart city program during a pandemic through Facebook Ads. Facebook ads are a medium for advertising and promoting smart city applications to people in Indonesia with a clear demographic target and results that are regularly monitored. This method is expected to help the socialization process of smart cities during a pandemic by utilizing the latest technology.

2. Method

This study uses a qualitative method. Qualitative research is research to investigate, discover, describe, and explain the quality or features of social influences that cannot be explained, measured, or described through a quantitative approach. Qualitative research produces descriptive data of written words from the people into terms used in quantitative research.

This research used the literature study method by collecting scientific article data indexed by Scopus. The data collected is in the form of articles that have been researched by previous experts. Articles are analyzed qualitatively using NVivo software, by integrating information derived from data analysis and building relationships between existing theories so that they can produce new findings [10]. NVivo is software to help qualitative and mixed methods researchers from initial research to data analysis.

The research uses data and scientific articles on Facebook ads as a platform for public policy dissemination, including: the number of Facebook users in recent years, the demographics of Facebook users, and Facebook's advertising features. Smart city program data and applications in Indonesia include: smart city program plans, number of programs, and smart city applications in Indonesia. As supporting data in this study, data on the development of COVID-19 cases in Indonesia.

Furthermore, an analysis of the development strategy for the dissemination of the smart city program to the public through digital marketing is carried out, namely by means of Facebook Ads. In-depth analysis of various Facebook Ads features that are optimized for the dissemination of smart city programs and applications in Indonesia. Ads are made with clear target audience demographics, budget, and results. The ad objective is set so that the ad gets reach, engagement, and responses from many Facebook users.

3. Results and Discussion

3.1. Smart City in Indonesia

Smart City is one of the efforts made by the urban ecosystem to overcome various kinds of problems and can be used to improve the quality of human life and for the local community. The Ministry of Communication and Information through the Directorate of Government Information Application Services (LAIP) together with the Ministry of Home Affairs, the Ministry of National Development Planning/Bappenas, the Ministry of PUPR, the Presidential Staff Office, the Ministry of Finance, the Coordinating Ministry for the Economy, and the Ministry of PANRB inaugurated the implementation of the Movement Towards 100 Smart Cities. The preparation of master plans and quick-win smart city (Smart City) for 100 districts/cities will be carried out in approximately three years 2017-2019. The selection of 100 districts/cities is expected to become a role model in implementing smart cities for other regions. In the development of smart cities for 100 districts/cities, six pillars are implemented, namely: smart governance, smart society, smart living, smart economy, smart environment, and smart branding [11].

In government, the use of information technology, especially in applications, is now widely used. This condition can be seen from the various types of technology that are available such as [1] Qlue application, this application can be used by the public to provide complaints about problems that occur in the city and the application can also be used to share information; [2] The e-report application, this application can be used to accommodate complaints from the public regarding water services; [3] The city application, this application can be used to provide information related to tourism such as hotels, culinary delights, and existing tourist objects [12]. The progress of smart city cannot be implemented and well known by the Indonesian people without digital socialization through social media.

The term "smart" in the smart city concept includes technology as an enabler but smart city strategy is not limited to technology solutions so far. Figure 1 is the "Smart City Wheel", developed by renowned urban strategist and smart city expert Dr. Boyd Cohen. At the smart city, to become truly smart cities or communities, cities need to first be in six key strategic action areas: Smart People, Smart Economy, Smart Mobility, Smart Environment, Smart Living, and Smart Government. In fact, "being smart" is more about smart methodologies and the proper implementation of useful and effective solutions than it is about technology.

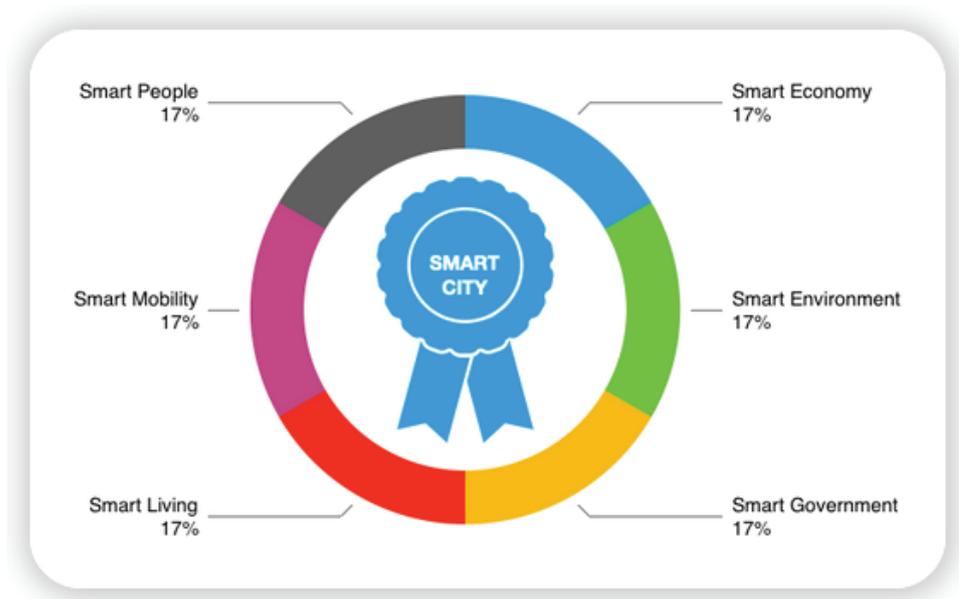


Figure 1: Concept of Smart City.

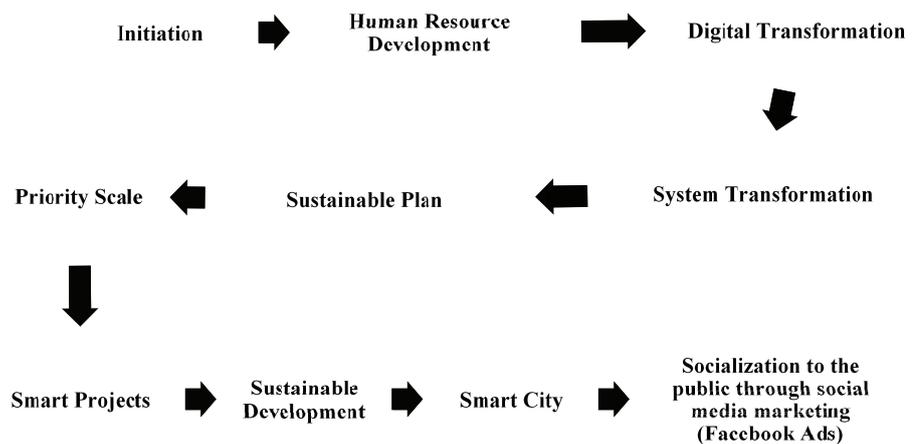


Figure 2: Smart City Development Model.

Figure 2 is a model of the smart city development process. The model was created by the author for this study. The model describes the comprehensive stages of smart city development from the initiation stage, human resource development, digital transformation, system transformation, sustainable plans, priority scales, smart projects, sustainable development, the formation of smart cities, to the socialization process of the smart city program using the Facebook ads platform. This model can be used as a reference and reference for the government to plan a smart city program.

Many big cities in Indonesia have already developed smart city applications. An example is East Java with the help of the University Brawijaya Malang to build a web-based information system called Simona. This information system can assist the public in mobility because this system provides information on which areas are included in the danger zone for being exposed to COVID-19 in East Java. DKI Jakarta is also not left behind in this regard. Through the Jakarta now (JAKI) application, the public can take advantage of the report and monitor functions. Reports will be integrated with the Rapid Community Response (CRM) system so that officers can immediately follow up. JakWarta in the JAKI application periodically releases brief updates on COVID-19 case data every day. To minimize community mobility, the DKI Provincial Government provides a JakPangan feature to help people monitor food prices from home and receive ordering services for daily necessities [13]. Yogyakarta is one of the cities that is aiming for a smart city in terms of public services. Purnomo, Obisva, & Astutik [14] examined Jogja Smart Services as a digital platform that can be accessed by the public via smartphones. JSS is a mobile application with several features collaborating with the public and private. JSS is a windows system associated with government networks. JSS was introduced in 2019, with 18,843 users.

3.2. Information Dissemination on Facebook

Facebook is still consistently the most popular and most used social media platform in the world. Facebook users are not in doubt so until now Facebook's audience in the world will reach 1.84 billion people in 2021. As the years go by, Facebook continues to move to become the most used social media platform in Indonesia, which can be seen from the development of the last 5 years number of users. Facebook continues to improve. Starting from 2017, active users on Facebook reached 115 million, in 2018 Facebook users 130 million people [15], in 2019 users reached 130 million [16], 2020 and early 2021 Facebook users reach 140 million people [17]. With data on the number of internet users in 2021 which reached 202.6 million people [18], it can be interpreted that 2/3 or 69.1% of internet users in Indonesia use Facebook. The statistics of Facebook users are increasing all the time. Every minute, 400 new users join Facebook. Every minute, Facebook users generate 4 million likes. Every day, Facebook updates are carried out by 35 million people [19]. Dissemination of information through social media is represented in Figure 3. Dissemination of information on social media requires stages: strategy selection, social media determination, market aspects, communication networks, and impact evaluation [20]. The development of social media increasingly

makes the dissemination of information easier and is integrated between social media, the internet, and big data.

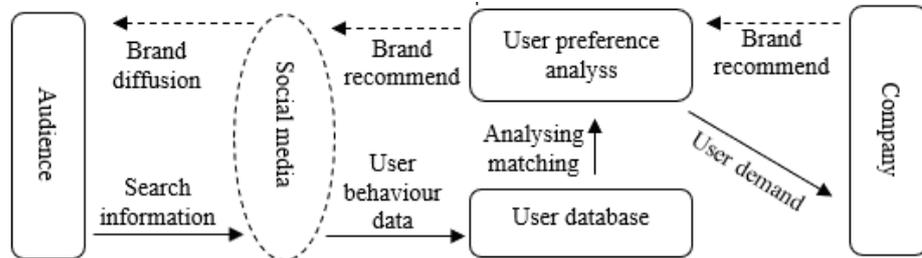


Figure 3: Information Diffusion in Social Media The pathway of brand diffusion and information dissemination goes both ways. As shown in Figure 3, on the one hand, the audience needs information and is ready to receive new information. On the other hand, brand preferences or information are arranged and then matched based on big data databases. Then the information is forwarded and recommended to users who meet the criteria [21]. In this case, social media users may not be information enthusiasts with appropriate topics but can be potential users who will access and receive brand information.

3.3. Smart City Program Dissemination Strategy with Facebook

3.3.1. Facebook Ads Feature

Facebook ads have many advantages. Among them have a wide reach with hundreds of millions of users every day, advertising with Facebook ads is cheaper than advertising in the traditional way, a large advertising target with markets all over the world getting a large amount of information and user interest, the last is that many people spend time via the internet can reduce traditional advertising.

The advertising feature that is owned by Facebook is used as a bridge for the government to be able to promote the program through the Facebook network. The increasing number of Facebook members from various circles is asked to be able to increase the sales turnover even more many times. The Facebook feature allows multiple entrepreneurs or power holders to have an interactive relationship with each other with the target audience for the advertisement/campaign/program being promoted. Advertisers who are aware of the benefits of Facebook ads are another factor that can influence purchase intention and audience attractiveness. Ads offered through Facebook Ads have the confidence of an attitude stimulus that instills buyer intentions [22].

Furthermore, Facebook Ads make it easy for its users. Facebook helps improve your brand image and brand equity. The convenience that has been presented increases

the user’s intention to buy from Facebook ads. Besides, it shows a relevant relationship for companies that use Facebook ads as a strategy that is used as a whole.

3.3.2. Smart City Program Campaign Targeting

The theory expressed by De Fleur and Ball Rokeach regarding Social Category Theory can be used to prove the influence of age, education level, and gender on media consumption behavior. This theory assumes that there are broad social categories in industrial city societies that have more or less the same behavior towards certain stimuli. These social categories can be based on age, gender, income level, education level, place of residence (village or city), or religion. Variables such as gender, age, education seem to contribute to a person’s selectivity towards the available media.

Facebook shows ads to an audience that has an interest in a particular issue. Ads targeting can be direct to the appropriate audience. Application campaigns and the Facebook ads program are set to determine the right target audience. Based on the analysis carried out with the ‘ads targeting’ tool, the advertising targets are carried out based on demographic, social, educational, interest, connection, behavior, and tools used by the audience to access information.

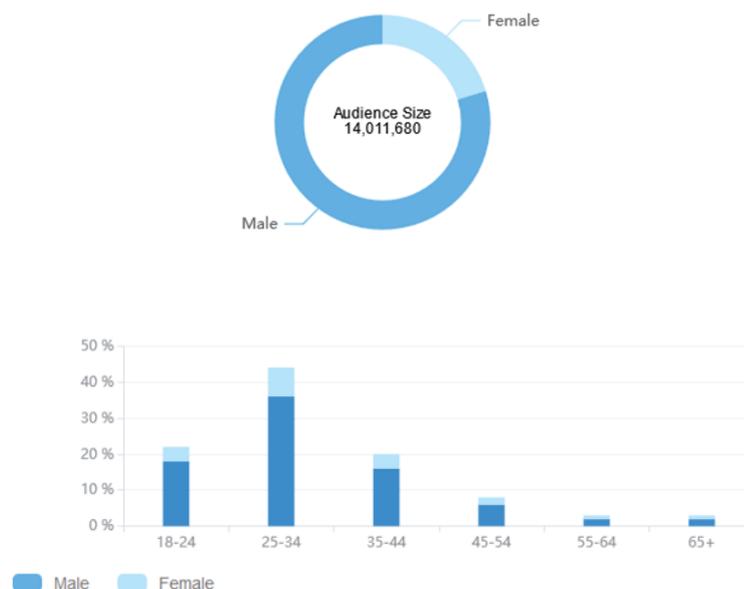


Figure 4: Age and Gender of Ads Audience.

Based on gender, the target audience for the smart city campaign on Facebook is dominated by men (Figure 4). This is by the data that the percentage of male Facebook

users is more than female users. The data collected by Kemp [23] shows that the percentage of Facebook users by a female is 44.4%, while the percentage of Facebook users are male: 55.6%.

The target audience for the smart city program campaign is adolescents to late adulthood. The percentage of the audience for adolescents aged 18-24 years is 20%, early adults 25-34 years old is 35%, and late adults are 15%. Smart city program audiences are usually of productive age who are usually more aware of technology and have high enthusiasm for government programs. Also, in the use of social media, adults tend to use it to fulfill their curiosity about various things on social media and while teenagers use social media because social media is a trend [24].

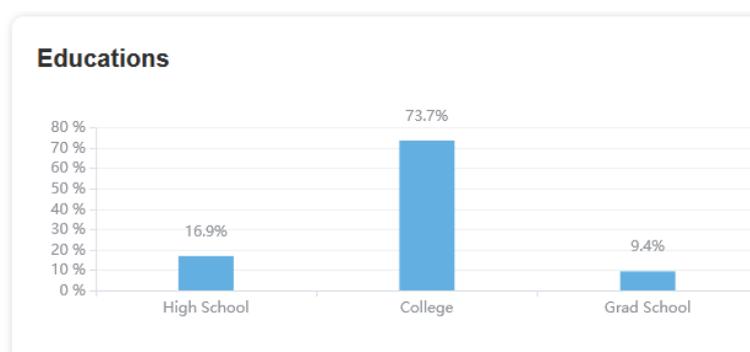


Figure 5: Education of Ads Audience.

The level of education and occupation of a person also determines the content of the information read (Figure 5). The advertisement for the smart city program attracted the attention of Facebook users with a higher education level. People in the twenty-one to thirty-year age group with the majority of their education levels having graduated from undergraduate, diploma, and master's degree choose the internet as the main media for consumption. In contrast to respondents under the age of twenty, respondents aged twenty-one years and over, both male and female, use internet access to seek information through a website page. On average, people of that age access the internet for seven days a week with a duration of more than 5 hours per day [25].

The top ten jobs targeted for smart city program advertisements include jobs related to administrative services, management, sales, media, production, engineering, IT, computing, business, and medical services (Figure 6). The job list is thought to have a high interest in government programs and city development. Audiences will access smart city information for work purposes or only for additional information.

Easy internet access is supported by smartphones, PCs, laptops, or other netbooks or tablets, making information now in hand (Figure 7). The internet has become a convergent medium, in which various forms of media can be obtained. The type of

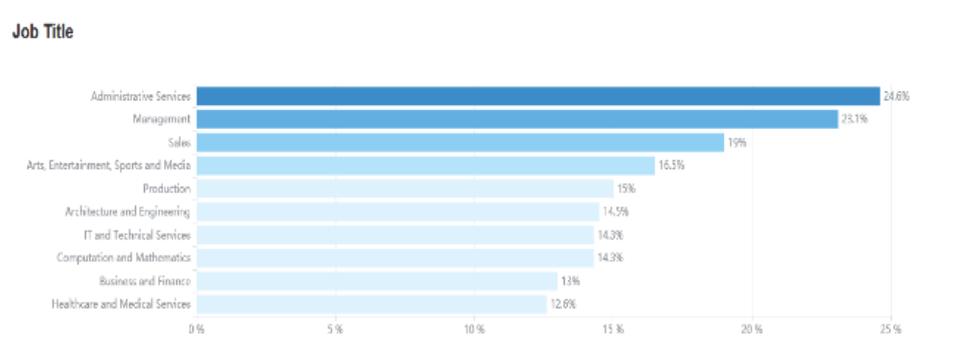


Figure 6: Job Title of Ads Audience.

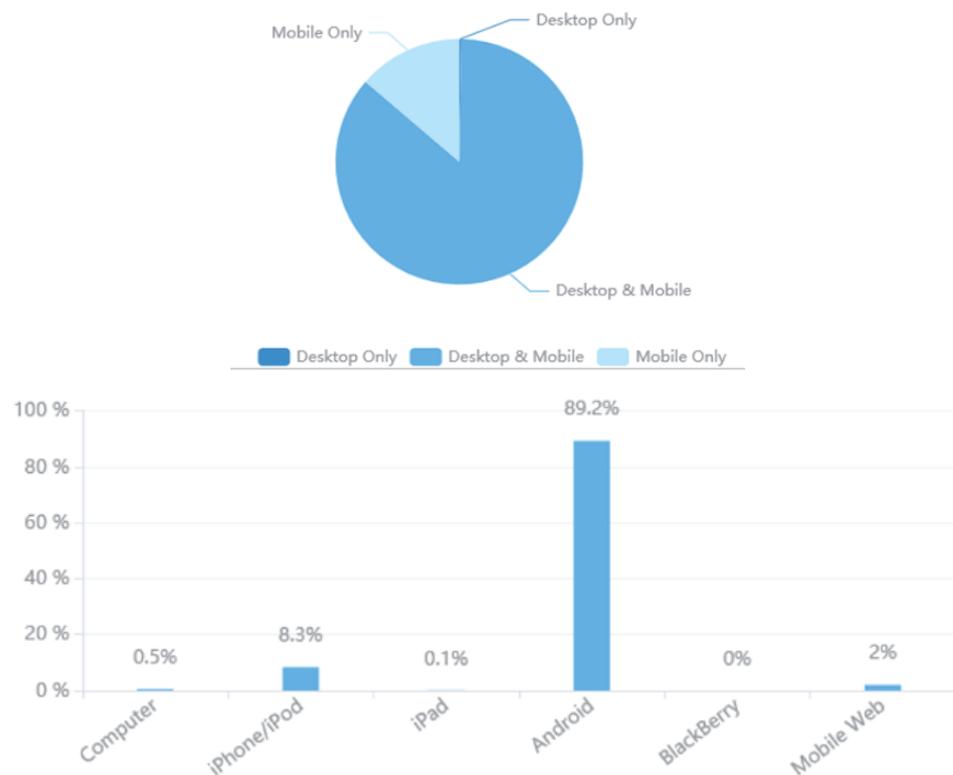


Figure 7: Device of Ads Audience.

media also affects social media access and information accessed [26]. The target of the Facebook ads program is users who access Facebook using an Android smartphone. This is supported by the increasing number of android users in Indonesia. In its report, IDC revealed that there was a growth in smartphone use by 49 percent compared to the previous quarter, and 21 percent from the same period last year. From the report entitled "Essential Insights into the Internet, Social Media, Mobile, and E-Commerce Use Around the World", as many as 120 million Indonesians use mobile devices, such

as smartphones or tablets to access social media, with a penetration of 45 percent. Within a week, online activities on social media via smartphones reached 37 percent.

Advertisers can take advantage of trending hashtags so that brands can take part in interesting conversations in the community. But we still can't just follow all trending hashtags, we have to choose hashtags that are still related to the brand. The goal is that the content presented is not considered spam by the audience and does not reduce their trust in the brand.

Using trending hashtags will also increase the potential if message brand our can be seen by the wider community, and provide a little fame for a certain period of time. This of course can provide benefits, especially in terms of increasing awareness and engagement with brand. Another function of taking advantage of trending hashtags is to connect with new audiences and increase good relations with old customers. Smart city program ad settings can use hashtags as shown in Figure 8.

Suggestions			
#	Interest	Audience	Path
1	Smart city	14.001.680	Interests>Additional Interest
2	Sustainable city	786.360	Interests>Additional Interest
3	Monitor (synchronization)	259.120	Interests>Additional Interest
4	Bicycle parking rack	942.100	Interests>Additional Interest
5	Graz University Technology	67.710	Interests>Additional Interest
6	Siemens Wind Power	31.290	Interests>Additional Interest

Figure 8: Hashtag Suggestions.

Increasing Facebook Ads Reach Facebook Ads can help governments reach their goals by creating more value and reducing costs. Besides, it can analyze the visibility, viability, and sustainability of the program to reach audiences who use social media which is used for business marketing or information dissemination purposes. Research by Alraja et.al. [27] shows that social media can assist in reaching their target demographic in a very efficient way. Facebook Ads also play a key role in engaging stakeholders actively, then increasing content creation and targeting the intended clients.

Facebook provides a feature that can estimate the reach of the ad. This allows advertisers to reach a large audience according to the target of the ad. Then, after knowing the potential reach, advertisers can make an ad model as attractive as possible to attract a large audience so that maximum reach and engagement results. Marketing with viral techniques and close contact with customers, low cost, and the possibility of targeting a very specific population space to attract advertisers of various areas and sizes [28].

Reach is the total number of people who viewed Facebook Ads content, or in other words, reach is the number of unique people who viewed ad content. If 100 people in total have seen the ad, it means the reach of the ad is 100. *Reach* is used to find out if there is something wrong with the content or advertising material [29]. If the Ad has reached many people but has not resulted in any conversions, it means that improvements must be made to the ad content. On the other hand, if the ad content gets to *reach* a lot, it means that it has succeeded in making its way to many new users, which allows the content or advertisement to be involved or shared [30].

3.3.3. Attract Audience Engagement

Public engagement is in building intellectual, affective, behavioral, and social. Engagement is very beneficial for the government because it can affect the audience's desire to use the application, the trust, engagement, and performance that the government has. Likewise in terms of business, many companies are using social media as a tool to engage fans and consumers to spread the brand enhancement of the company. However, regard to consumer engagement remains little and mostly lacking [31].

Facebook Ads engagement is a form of Facebook user response interaction that is displayed in digital form when viewing and responding to posts, such as clicking, giving *likes*, or providing comments [32]. Advertising on Facebook can be achieved through an application on the site that allows users to create their advertisements to be posted on the site. Facebook advertising allows users to engage with business ads in the same way they interact with other content on Facebook [33].

It explained that in the use of Facebook advertising and automated phone calls, both of which were disseminated throughout the population. So that the impact of the 2 deployment strategies on user engagement with Facebook ads and their participation in its spread. Existing Facebook data, almost all users switch from exposure to engagement with advertisements carried out on mobile devices. This ensures that the ad content created is formatted for mobile devices so that engagement actions carried out by users can be carried out easily and according to the user's wishes [34].

By increasing public involvement in the smart city government program, the public can respond in the form of input and criticism, as well as support for the progress of the program. This becomes an evaluation material for the government and programmers designing smart cities so that applications are better day by day. Through Facebook, the audience can also ask questions and respond quickly.

3.3.4. Optimizing Ad Costs

The size of the costs incurred for Facebook ads depends on turnover. The allocation of Facebook ads always changes per month because following the existing coordination, the cost of Facebook starts from Rp. 50,000 and evaluated every day. Costs incurred for Facebook ads are comparable to those obtained [35]. Factors that affect the price and costs of Facebook ads are Cost Per Purchase, Cost Per Click, and others. To be able to get a cheap price for Facebook ads, use a large audience or it can be called Facebook Ads Broad Audience. But this method is less effective because the ad is not accurate. On the other hand, to install Facebook the price that is taken depends on the company's ability to scale up. Facebook says everyone can choose the ad they want. Users can get advertisements in the price range per week, which is \$ 5 to \$ 50,000 per week [36].

In Indonesia, there are the lowest costs that can be used when you want to do education. The price range starts from the lowest, which is IDR 10,000 per day. When trying Facebook Ads it is recommended that it costs IDR 10,000 per day for 10 days. As for payments, Facebook ads provide various options, namely by credit or debit cards made for online payments, docu-wallets by filling out deposits on Facebook ads, and Facebook ad coupons which are usually obtained by new users who have just learned Facebook ads.

4. Conclusion

Facebook Ads is a platform for advertising the dissemination of smart city applications in Indonesia by optimizing various superior features of Facebook. Optimization of smart city dissemination by targeting advertising audiences with the right demographic, psychographic and geographic characteristics. Facebook ads enhance public brand awareness about smart city applications and programs with a wide advertising reach, high engagement, and low advertising costs. This research uses only one social media, namely Facebook. Instagram and TikTok are social media that are no less widely used in Indonesia. Therefore, further studies can compare several social media platforms: Facebook, Instagram, and TikTok. It is also necessary to create various examples of advertising models with different objectives to determine the difference in results. Then the researcher needs quantitative research for further analysis.

Conflict of Interest

The authors declare that there is no conflict of interest related to the writing or publication of this article.

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