

IMPACT OF THE EXISTENCE OF THE BTS TOWER (BASE TRANSCIEVER STATION) IN JATIROTO DISTRICT, WONOGIRI REGENCY

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Received 25 February 2015; accepted 8 May 2015; published 13 May 2015

ABSTRACT

This study aims to determine: (1) the distribution and affordability of the BTS tower signal (2) The impact of the existence of the BTS tower on the education of students at SMKN 1 Jatiroto (3) The impact of the existence of the BTS tower on the economic changes of the community around the BTS tower. The method used in this study is a qualitative descriptive method. This study describes/describes and finds out the impact of the existence of BTS towers on the education of students of SMKN 1 Jatiroto and the economic changes oinf the surrounding community. Data collection techniques used are observation, questionnaires, and documentation. The results of the study can be concluded that: (1) The distribution and coverage of the BTS Tower signal in Jatiroto District is spread over three areas and there are five BTS Tower Towers. Each BTS Tower can reach a signal as far as 5km and this is also influenced by the topography of the surrounding area (2) The impact of the existence of a BTS tower on the education of students at SMKN 1 Jatiroto has a positive impact in the form of making it easier for students to access the internet, making it easier for students to learn. The negative impact is radiation from the BTS tower signal and anxiety about the collapse of the BTS tower. (3) The impact of the existence of the BTS Tower on the economic changes of the surrounding community is that it can increase economic income, such as increasing income for people who sell credit and making it easier to access the internet. The negative impact is the increasing number of people's need to buy credit which results in an increase in public spending, and radiation from BTS tower signals.

KEYWORDS

Education
Economy
Impact
Tower BTS

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1. Introduction

The telecommunications technology and industry are currently experiencing very rapid development, especially for wireless and/or mobile communication systems. Transformation in various fields is certainly very useful for the public because with the tighter the competition, then the products or services produced will also be better quality. In Indonesia the use of technology has certainly become the primary thing in everyday life, especially the use of smartphones in every activity so that it is almost owned by everyone (Koswara, Syarief, and . 2021). This has resulted in an increase in the need for facilities that support the establishment of a wireless network, such as telecommunications towers that provide communication networks for users. The infrastructure development will involve investment cooperation between the government, the public and the private sector in the field of digital technology such as cloud, data center, security management, and broadband infrastructure (Prasetya, Jayadi, and Susanto 2020). The construction of this BTS is carried out with the aim of the network provided by the company is broad so that it can be reached by all Telkomsel customers throughout the world Indonesia. Based on the data obtained, in 2003 PT Telkomsel has built 4,820 BTS towers and in 2013 has increased to 69,905 BTS throughout Indonesia. This shows that PT Telkomsel seriously wants to always meet the needs of its customers (Satya 2015). The growth of telecommunications towers, which are the main infrastructure in telecommunications operations, is urgently needed for service and improvement of the quality of telecommunications networks. Building this telecommunications tower requires the availability of

land, buildings, and air space. Whereas in the context of the effectiveness and efficiency of space use, towers must be used together and still pay attention to the sustainable growth of the telecommunications industry, public health, and environmental aesthetics. Coordination of the construction of the tower between the operator and the Regional Government, the scenery in the area will be filled with BTS (Base Transceiver Station) which is disturbing and not harmonious (Safwani, Firdausi, and Hakim 2021). A tower is a building that functions as a means to place telecommunications equipment whose construction form is adapted to the needs of telecommunications operations. BTS (Base Transceiver Station) is a telecommunications infrastructure that facilitates wireless communication between communication devices and network operators. BTS sends and receives radio signals to mobile devices and converts digital signals to be sent to other terminals for messages or data circulation (Lestari, et al,2018:364).

In the aspect of safety and public concern for health due to the construction of BTS tower infrastructure, community assessments argue that safety and health conditions in the environment have no impact on the area around the site and are safe for the community (Illahi Dinati, Edy Santosa, and Durrotun Nasihien 2021). The increasing number of telecommunication towers indicates that the existing telecommunication infrastructure has not been able to meet the community's communication needs. The impact of radio wave radiation on human health, cannot be separated from the energy that generated by the device. The glow always follow the rules of radiation electromagnetic waves according to the electromagnetic spectrum which are grouped by wavelength, frequency, and the effect (Hananto 2014). The absence of regulations regarding the arrangement of telecommunications towers will result in uncontrolled tower construction which has an impact on the aesthetics of the city, public safety, and difficulties in collecting data for retribution. The existence of the BTS Tower in the Jatiroto District is very much needed by the community to get a communication network. BTS towers in Jatiroto District are spread in various village areas. In Jatiroto District, there are towers scattered in some areas that have not been mapped at this time and there is no party that maps the distribution and coverage of the signal from the Tower Tower. After mapping the location of the BTS Tower (Base Transceiver Stations), the map can be used to find out information related to the mapped object that has been included in the map, for example, the distribution of, the BTS Tower (Base Transceiver Stations) and how far the signal coverage is. own every BTS tower. The construction of BTS towers can have an impact on the impact the surroundings, such as the impact on the education of SMKN 1 Jatiroto students as well as n the description aren above, the background for this research is entitled "The Impact of the Existence of the BTS Tower (Base Transceiver Station) in Jatiroto District, Wonogiri Regency in 2021". The selection of the title is based on the absence of research on the impact of the existence of towers in the Jatiroto District. The purposes of this study are 1) To find out the map of the distribution and signal coverage of the BTS Tower (Base Transceiver Station) in Jatiroto District, Wonogiri Regency. 2) To determine the impact of the existence of the BTS Tower (Base Transceiver Station) on the education of students of SMK N 1 Jatiroto in Jatiroto District, Wonogiri Regency. 3) To determine the impact of the existence of the BTS Tower (Base Transceiver Station) on the Economic Changes of the Community in Jatiroto District, Wonogiri Regency. The benefits of this research are A. Theoretical benefits are 1) The results of this study are expected to be used as a contribution to science, especially geography. 2) The results of this study are expected to add insight. B. Practical benefits, namely 1) For the author to add and enrich the author's knowledge, as well as provide new insights about the distribution and affordability map as well as the impact resulting from the establishment of towers in Jatiroto District. 2) For readers As a source of information and reference for readers regarding the condition of the community in the Jatiroto District. 3) For the community, this research is expected to help and increase insight into the distribution and range of signals from towers in the Jatiroto District.

2. Method

This research is qualitative research that uses a theoretical basis as a guide to focus research and understand phenomena. The method used is a descriptive method by describing or describing research subjects based on current facts and circumstances. The descriptive method is more directed at revealing a problem or situation as it is and revealing the facts that exist, although sometimes interpretation or analysis is given. This descriptive method describes systematically the distribution and coverage of the signal and the impact caused by the existence of the BTS Tower (Base Transceiver Station) in Jatiroto District, Wonogiri Regency. The population is a generalization area consisting of objects or subjects that have certain qualities and characteristics set by researchers to study and draw conclusions (Sugiyono 2017:80). The population in this study is the community around the BTS tower. The population data are as follows men (21.467) and women (21.134). And students of SMKN 1 Jatiroto in Jatiroto District, Wonogiri Regency. The total data are as follows men (347) and women (604). According to Sugiyono (2017: 85) the sample is part of the number and characteristics possessed by the population. The sampling technique used in this study is the accidental sampling technique, which is the determination of the sample determined by chance or incidental to each person encountered by the researcher provided that the person is suitable as a data source. (Sugiyono: 2013). In this study, taking the number of community respondents and students of SMKN 1 Jatiroto using the Slovin formula with an error percentage of 20%. The population to be studied has been determined by the number of people as many as 42,601 (25) and the number of students of SMKN 1 Jatiroto 951 (26).

3. Results and Discussion

3.1. Distribution and Accessibility of BTS Tower Signals in Jatiroto District, Wonogiri Regency

The distribution and coverage of the BTS Tower signal in Jatiroto District, Wonogiri Regency is spread over three areas and there are five BTS Tower Towers. This can be seen from the explanation below:

- a) TELKOMSEL BTS Tower which is located in Jatiroto Village, Jatiroto District. TELKOMSEL BTS Tower Lis located at coordinates 111°06'05,6" and 7°52'54.0" this BTS Tower has been around 13 years ago. The existence of this tower is located near a residential area.
- b) BTS XL Tower which is located in Jatiroto Village, Jatiroto District. BTS XL tower is located at coordinates 111°06'07,5" and 7°52'53.0" and has been established about 10 years ago. The existence of this tower is located near a residential area.
- c) INDOSAT BTS Tower which is located in Jatiroto Village, Jatiroto District. The INDOSAT BTS Tower is located at coordinates 111°06'3.7775" and 7°52'54.0" and this BTS Tower has been established about 13 years ago. The existence of this BTS tower is located near a residential area.
- d) TELKOMSEL BTS Tower which is located in Sugihan Village, Jatiroto District. This TELKOMSEL BTS Tower is located at coordinates 111°138'78.09" and -7°86'78.09" and this BTS Tower has been established about 13 years ago. The existence of this BTS Tower is located around residential areas.
- e) TELKOMSEL BTS Tower which is located in Dawungan Village, Jatiroto District. This BTS tower is located at coordinates 111°08'10.002" and -7°53'54,336" and this BTS tower has been established about 10 years ago. This BTS tower is located in the vicinity of residential areas.

Each BTS Tower can reach a signal as far as 5km and this is also influenced by the topography of the surrounding area. Areas that are located more than 5km from the BTS Tower have problems with an internet connection, this is because the area is not covered by the signal from the BTS Tower Tower. Areas that are not reachable from the BTS Tower in Jatiroto District, in this case, still get a signal to communicate because it is reachable from the BTS Tower infrastructure which is in the District adjacent to Jatiroto District. The area is bordered by Jatiroto Sub-district which has BTS Tower infrastructure, namely, in the north it borders with Jatisrono District, in the south it borders with Tirtomoyo District, in the west it borders Sidoharjo District and in the east it borders on Slogohimo District. However in this case the strength of the signal is still influenced by the topography of the area. Of the five towers located in three different villages in Jatiroto District, the area that gets an adequate signal is in Jatiroto Village, Jatiroto District. This

is because in one village there are three different towers, namely the Telkomsel BTS Tower, Indosat BTS Tower and XL BTS Tower which get a good signal and Jatiroto Village is the center of various activities in Jatiroto District. As for how to overcome poor signal strength, in this case, it can hinder access to information and communication from the public. Some of them go to places or areas with strong operator signals to support accessing information, especially students who are currently still conducting online learning activities.

3.2 The Impact of the Existence of the BTS Tower on the Education of Students of SMKN 1 Jatiroto

Based on the results of research on the impact of the existence of the BTS Tower on the education of SMKN 1 Jatiroto students, there are positive and negative impacts.

- a. Positive impact, Very helpful in accessing the internet and the online learning process in current conditions.
- b. Negative impact
 - 1) Radiation from BTS tower signal (noise, headache, itching)
 - 2) Anxiety about the collapse of the BTS tower
 - 3) Increased use of credit for cellular data

Based on the results of the research questionnaire that I have distributed to the people living in the area around the BTS Tower tower, data is obtained in the form of the above negative impacts such as radiation from the existence of the BTS Tower tower. With the ease of accessing the internet that students feel in the current conditions in online learning, it will also have an impact on the dependence of students in using smartphones and this is also a concern for some parents of students against their children abusing in accessing information that should not be accessed. The way to overcome this is to supervise and understand and guide their children.

3.3 The impact of the existence of the BTS Tower on changes in the economy of the community in the Jatiroto District

Based on the results of research on the impact of the existence of the BTS Tower on the economic changes of the community around the BTS Tower, there are positive and negative impacts.

- a. Positive impact
 - 1) BTS towers can make it easier for the surrounding community to access the internet.
 - 2) Increase sales of pulses that can increase economic income for the surrounding community.
 - 3) Increase the number of pulse sales
- b. Negative impact
 - 1) The increasing number of people's needs is caused by the increasing number of operator credit needs for internet data.
 - 2) The number of public spending increases
 - 3) Radiation from BTS tower signal

Based on the results of the research questionnaire that I have distributed to the people living in the area around the BTS Tower tower, data is obtained in the form of the above negative impacts such as radiation from the existence of the BTS Tower tower. The existence of the BTS Tower has an influence on economic changes in the community around the BTS Tower tower, this can be seen by the signal strength of the BTS Tower which will affect and facilitate communication. To anticipate the necessary changes in production and marketing, so that activities are carried out in the digital space. The first process of digital transformation begins with digitizing information into the content. Then proceed with digitization, which is an effort to utilize digital technology in the activation process. In the business world, this is a goal for cost savings and opening up new revenue spaces. Or in this case, it is called online selling which is carried out by the community around the BTS tower. During the COVID-19 pandemic, accelerating the digital transformation process, because people have to survive in change, especially since the economy around the world is experiencing extraordinary contractions, so digital transformation must be carried out quickly.

The most important element in the digital transformation process is the availability of internet connectivity. This infrastructure is a prerequisite that must be provided in advance so that people can enter the digital world. Therefore, the existence of BTS towers around the community is very helpful in changing the community's economy. Even though in this case the existence of the BTS Tower does not have much effect on the economic changes of the surrounding community. This is because not all people near the BTS Tower have a business in the field of buying and selling operator credit. The existence of the BTS Tower is not able to reduce the unemployment rate of the community. The existence of the BTS Tower creates feelings of anxiety or worry that the BTS tower will collapse if strong winds and earthquakes occur.

4. Conclusion

Based on the results of research and discussion, the following conclusions can be drawn: The distribution and coverage of the BTS Tower tower signal in the Jatiroto District is spread over three areas and there are five BTS Tower Towers. Each BTS Tower can reach a signal as far as 5km and this is also influenced by the topography of the surrounding area. The impact of the existence of BTS towers on the education of students of SMKN 1 Jatiroto, namely making it easier for students to access the internet, and making it easier for students to learn. The negative impact is radiation from the BTS tower signal and anxiety about the collapse of the BTS tower. The impact of the existence of the BTS Tower on the economic changes of the surrounding community is that it can increase economic income, such as increasing income for people who sell credit and making it easier to access the internet. The negative impact is the increasing number of people's need to buy credit which results in an increase in public spending, and radiation from BTS tower signals.

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