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The Effect Of Increasing Telecommunication Network And Internet Availability On The Number Of Domestic Tourists In Indonesia

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Abstract
The progression of time and the growing impact of globalization across the globe have generated a demand for a diverse array of technologies, electronic products, and the Internet of Things (IoT). The human requirement for this encompasses various activities, including personal, economic, and numerous other endeavors. Among the sectors, the industrial domain stands out due to its intimate connection with the presence of infrastructure and amenities that guarantee the fulfillment of requirements for technology, electronic commodities, and the Internet of Things (IoT), all of which serve as catalysts in the tourism industry. This is substantiated by the research findings concerning the impact of the independent variables (Telecommunication Network and Internet) on the dependent variable (Number of Domestic Tourists in the Archipelago), revealing a statistically significant correlation of 70.1%. This means that the independent variable can explain the dependent variable well in this study. Additionally, the calculated F value is 154.442 with a significance level of 0.000, which is less than 0.05. Therefore, the model can be used to predict the number of domestic tourists. The results of the regression output indicate that the network coefficient has a value of 17,025.865. This implies that for every one-point increase in the independent variable, the dependent variable is expected to increase by 17.025.865 units. Since the regression coefficient is positive, it can be concluded that the direction of influence of the independent variable on the dependent variable is positive.

Keywords: *Globalization, Tourism Levers, Telecommunications And Internet Networks, The Number Of National Domestic Tourists.*

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INTRODUCTION

The need for technology in the current era of digitalization is increasing rapidly. One of them is the need for an internet network. Moreover, amid a pandemic like now, most people do their activities online. On the Republika.com page, internet use in Indonesia during this pandemic reached 175.5 million, which has increased by 25 million or 17% compared to the previous year in 2019. With such a rapid increase in internet network usage, of course, a stable internet network is needed. to be able to provide good performance as well (Utami et al., 2022). In line with the development of the times, the advancement of internet technology is also increasingly advanced. Just

like the initial function of the Internet, the Internet has a narrower role. Currently, it is almost impossible to mention the parts of the Internet one by one. Still, the features of the Internet are discussed above, but broadly speaking, the functions of the Internet can be grouped into several. The Internet functions as an aspect of communication, information provider, and facility for promotion. The Internet has developed into one of the most popular media in the world. A survey conducted by the Association of Indonesian Internet Network Providers (APJII) revealed that more than half of the population of Indonesia is now connected to the Internet. The large and growing number of internet users has created an internet culture. Starting from shopping, communicating, playing games, doing business, studying, and socializing. The Internet itself is a network that connects many hosts via protocols, hardware and communication lines(Nunggu et al., 2023).

The Internet is the best human invention that is constantly developing. It is a technology that continues to create and be known to many people and is always used by many people. At first, the Internet could only be used on computers. However, now, the Internet can be used on various devices that can connect to the Internet, such as smartphones and tablets. In addition, the Internet is helpful in terms of websites, both in terms of website creation and website use (Fitria D et al., 2022). According to (Saputra et al., 2021) the Internet is a way for information technology to narrow the gap in human resources because information technology does not recognize spatial aspects An essential factor to note is that when you interact with the Internet, you will automatically be connected with all users around the world, namely To spread and access information, As a source of information from experts, A place to find ideas, As a medium of fast communication; Sending and receiving documents Currently, a lot of information is emerging through various devices. This is because the Internet provides information sources that are more effective and efficient than having to watch or use other electronic media, such as radio, television and newspapers, to get information (Fitria D et al., 2022).

In today's world, the advancement of technology and digitalization has become ubiquitous and imperative. Various technological and digital advancements, such as the Internet of Things (IoT), the growth of digital trade like E-Commerce, transformations in the banking sector like E-Banking, and even the tourism industry, where digitalization is becoming a familiar norm, are essential for the community's future needs. The necessity for technology, along with comprehensive digitalization across all facets, is highly pertinent in light of the existence of telecommunications networks and the internet, both of which serve as the foundation for myriad activities. Particularly within the tourism sector, the presence of accessible telecommunication and internet networks carries significant weight, emerging as a foremost consideration in discerning tourist destinations to explore. In this modern era, where virtually everyone is intricately connected to gadgets facilitating interactions, such as social media, this availability becomes even more paramount. This enables continued interaction and remote work capabilities. Additionally, the proliferation of e-money

has expanded the reach and utilization of accommodation and transportation provider platforms – fundamental requirements for travelers. All these aspects hinge significantly on the reliability of telecommunication networks and the internet. In this study, the researcher aims to examine the correlation between the availability of telecommunication networks and the internet and their potential influence on the number of domestic tourists in Indonesia.

The telecommunications network is the combination of infrastructure and systems that make it possible for communication to occur among individuals, devices, and entities over long distances. It involves a range of technologies and parts that collaborate to transmit not just voice and data, but also other types of information. The telecommunications network also a network that intermediaries for sending, receiving messages and also exchanging information at great distances (Purbawanto, 2020). Meanwhile, according to Law Number 36 of 1999 concerning Telecommunications, it is explained that telecommunications is any transmission, sending and or receiving of any information in the form of signs, signals, writings, images, sounds or sounds through wire systems, optics, radio or other electromagnetic systems. Meanwhile, the exchange of information uses transmission media as intermediaries and means to distribute and carry information from the sender so that it arrives at the recipient's place of information (Indonesia, 1999).

The Internet is more often known as a collection of different interconnected networks and becomes a good function. Which with the development of the internet towards web 3.0 and the Internet of Things, the role of developing the right communication network is very important and needed (Czaplewski, 2021). By definition using lexical, the substance of the internet is one of the communication media between humans globally with a communication network connected to a computer network. So that the internet is a computer system that is connected to each other, which when it is connected to the internet, it can be said that the connectivity can reach other computers by means of a telephone cable network and (Tekmom's Tech Buzzwords, in: http://www.tekmom.com/buzzword /zdinternet.html).).

The Base Transceiver Station (BTS) is a device that serves as a liaison, bridging communication devices for cellular users' networks with other networks. The connected BTS units are subsequently controlled by a device known as the Base Station Controller (BSC), which is connected through either a fiber optic or microwave connection. The BSC itself is a discrete unit incorporated into the TRX compact device within the BTS infrastructure (Retnosari & Setiadi, 2018). The BTS functions as a network intermediary connecting a telecommunications operator with its consumers. The BTS is composed of three primary components: the tower, the shelter, and the feeder (Siregar et al., 2019).

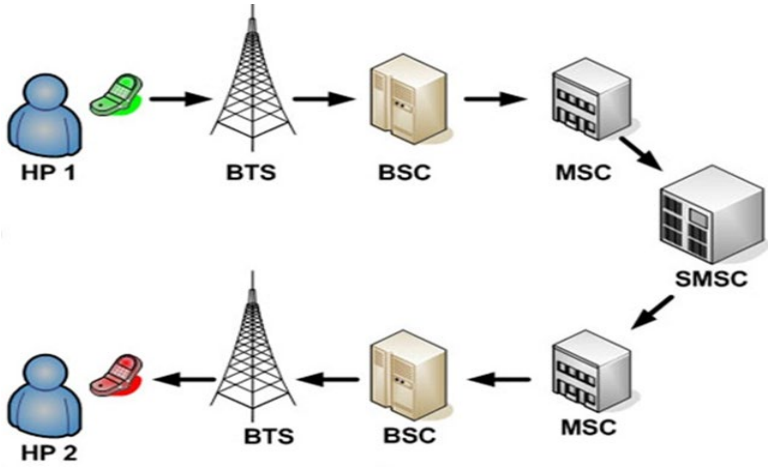


Figure 1. BTS Typology

The role of the BTS is to serve as an interface for providing a network, wherein the network constitutes an electromagnetic wave radio signal for its users. Similar to modems, cellphones, and other devices, the communication direction originating from the BTS towards the user is referred to as the "downlink." Conversely, communication traveling in the opposite direction is known as the "uplink." (Andriancoko, 2011).

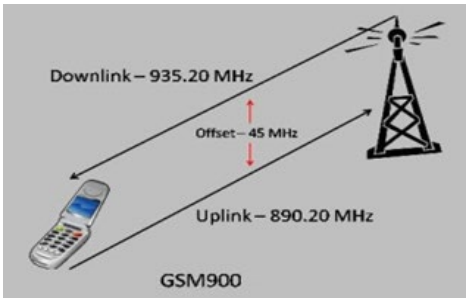


Figure 2. Downlink and Uplink

According to, Evalina, (2021) said that the results of the analysis of network quality data for 4G LTE operators in the Muhammadiyah University North Sumatra Campus Area that we have taken are the overall value of operator Y on the SINR parameter, which has a value range of 10> 50 dBm, with a percentage of 52.65% and 387 samples. Meanwhile, Operator Y has a rate of 29.26% and 175 models. And the more sampling, the bigger the presentation. The overall throughput value of operator X is only 0> 3 Mbps, while operator Y is 0> 30 Mbps. The performance level of 2 (two) 4G LTE operators in the UMSU Main Campus area based on data that has been taken and analyzed is a meagre throughput value of 0> 3 Mbps caused by high user traffic during the day, where the Muhammadiyah University of North Sumatra campus is active in lectures, and many students use data services.

From the above background, researchers want to research the influence of increasing telecommunications networks and internet availability on the number of domestic tourists in Indonesia.

METHODOLOGY

The research methodology employed in this study follows a quantitative approach, aiming to address the question of how the enhanced availability of telecommunications and internet networks influences the number of domestic tourists. The dataset utilized encompasses data from every province across Indonesia..

3.1. Operational Definition and Measurement of Variables

Operational definitions and measurements that will be analyzed in this study are presented below, followed by an overview of the variables under investigation:

3.1.1. Telecommunication Network and Internet

Operational research employs data concerning the quantity of Base Transceiver Stations (BTS), encompassing the number of BTS installations from all provinces within Indonesia. The dataset comprises information sourced from various villages/kelurahan, categorized by province and differentiated by cell phone reception signals (urban and rural areas). The dataset encompasses data from the years 2018-2019 and covers all 34 provinces across Indonesia. This dataset has been obtained from the official release by the Central Statistics Agency (BPS).

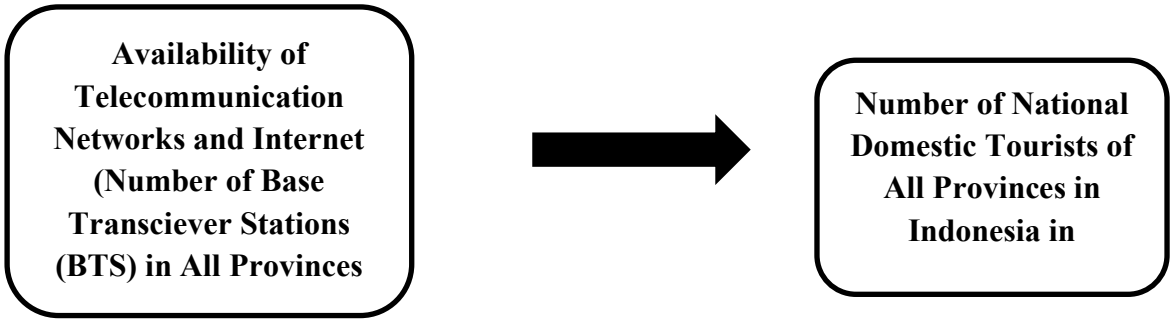
3.1.2. Archipelago Tourist

Operational research employs data regarding the count of domestic tourists traveling across all provinces in Indonesia. The data is extracted from the recorded number of trips taken by domestic tourists. This dataset comprises data from the years 2018-2019, encompassing all 34 provinces throughout Indonesia. The information has been sourced from the official release of the Central Statistics Agency (BPS).

3.2. Data analysis technique

The data analysis approach employed in this study involves panel regression analysis, with the Statistical Product and Service Solutions (SPSS) software serving as the analytical tool.

3.3. Research Conceptual Framework



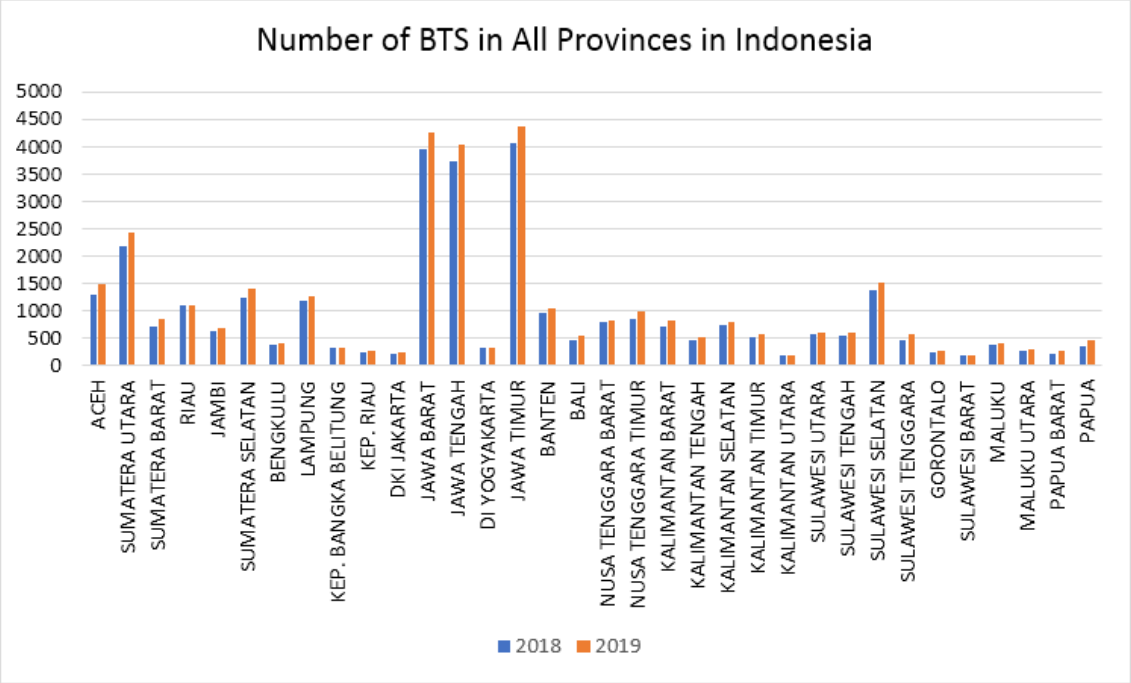
RESULT AND DISCUSSION

4.1. Description of Research Object

4.1.1. Overview of Telecommunication Network and Internet Research Variables

Telecommunication networks and the internet have evolved into fundamental necessities within contemporary society. These components are undeniably essential, serving as obligatory provisions to underpin all communal activities, including the realm of tourism. The presence of Base Transceiver Stations (BTS) is an absolute requisite in each tourist destination spanning Indonesia. Given the pronounced concentration of the Indonesian population on Java Island, telecommunication providers in the country are compelled to ensure that the number of BTS units correlates proportionally with the populace residing in a particular region. Illustrated in Figure 4.1 is the comprehensive distribution of BTS units across all 34 provinces in Indonesia, encompassing the entirety of the nation from Sabang to Merauke.

Figure 4.1
Number of Base Transciever Stations (BTS) in All Provinces in Indonesia Year 2018-2019

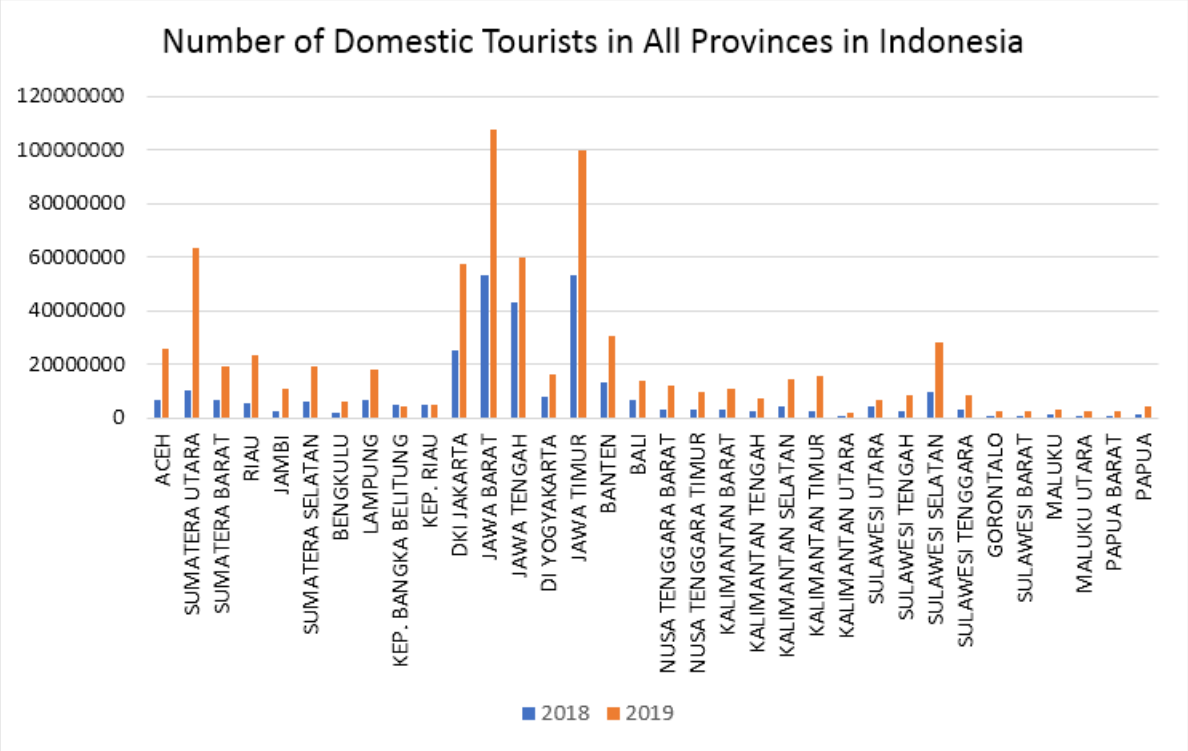


Source: Central Bureau of Statistics

As depicted in the image above, we can observe the dispersion of telecommunications and internet networks throughout Indonesia, with the predominant concentration situated on the island of Java. This is evident from the highest count of BTS installations per province, with the top three positions being held by East Java Province, West Java Province, and Central Java Province, respectively—all of which are located on the Java island.

4.1.1. Overview of Telecommunication Network and Internet Research Variables

Figure 4.2
Number of Domestic Tourists in All Provinces in Indonesia in 2018-2019



Source: Central Bureau of Statistics

From the image above, it's evident that the count of domestic tourists on a national scale, when examined with province-specific data, is predominantly concentrated in provinces situated on the island of Java. The top three positions nationally are held by West Java, East Java, and Central Java, respectively.

4.2. Regression Analysis Statistical Test Results

4.2.1. Coefficient of determination (R^2)

The coefficient of determination (R^2) is used to measure the extent to which the model can explain the dependent variable. The coefficient of determination is 0-1. The larger number (R^2) indicates that the ability to explain variables is getting better. The value (R^2) which is getting closer to one, indicating the network variable can provide

almost all the information needed to predict the variation of the variable number of domestic tourists.

Table 4.1
Coefficient of Determination Statistical Test Results (R^2)

Telecommunication Network and Internet	
R	0.873
R-squared	0.701

Source: The results of the research data.

The R-squared value derived from the regression analysis indicates the strength of the relationship between the variables, with an R value of 0.873. Based on the output, the coefficient of determination (R Square) is 0.701, signifying that the impact of the independent variables (Telecommunication Network and Internet) on the dependent variable (Number of Domestic Tourists in the Archipelago) is 70.1%. This indicates that the independent variables effectively elucidate the dependent variable within the scope of this study.

4.2.1. Simultaneous Significance Test (F Test)

Testing on the effect of all independent variables in the study can be done with the F statistical test, Explaining all independent variables can affect the dependent variable in the study.

Table 4.2
Anova Test Results

Telecommunication Network and Internet	
R	0.873
R-squared	0.701

Source: The results of the research data.

The F value obtained from the regression output is calculated as F = 154.442, with a significance level of 0.000, which is less than 0.05. This suggests that the regression model can be employed to predict the impact of the independent variables (Telecommunication Network and Internet) on the dependent variable (Number of Domestic Tourists in the Archipelago).

4.2.3. Regression Analysis

The t-statistical test shows how much influence the individual independent variables have in explaining the dependent variable

Table 4.3
Regression Test Results

Telecommunication Network and Internet	
Model	B
Constant (a)	-1714963.342
Network	17025.865

Source: The results of the research data.

Regression coefficient of the independent variable (Telecommunications Network and Internet) on the dependent variable (Number of Domestic Tourists in the Archipelago). According to the results of the regression analysis, the network coefficient, which elucidates the influence of the independent variables (Telecommunications and Internet Networks), holds a coefficient value of 17025.865. This can be interpreted as meaning that for each incremental increase of 1 point in the independent variable (Telecommunication Network and Internet), there is an associated increase of 17,025.865 in the dependent variable (Number of Domestic Tourists in the Archipelago). Given the positive regression coefficient, it can be inferred that the relationship between the independent variable (Telecommunication Network and Internet) and the dependent variable (Number of Domestic Tourists in the Archipelago) is positive in direction.

CONCLUSION

In tandem with the progression of time and the ever-expanding impact of globalization across the globe, the necessity for diverse technological innovations, electronic commodities, and the advent of the Internet of Things (IoT) has become an integral facet of modern people's daily requisites. Consequently, this burgeoning need initiates a cascade effect, compelling the provision of infrastructure and facilities to ensure the unfaltering availability of telecommunication networks and internet connectivity.

The abundance of telecommunication and internet networks finds its depiction through the availability of Base Transceiver Stations (BTS), serving as tangible indicators that a specific area is encompassed by these pivotal networks. The presence of Base Transceiver Stations (BTS) serves as a visual representation of the accessibility of telecommunication networks and the internet. This accessibility, in turn, emerges as a catalyst, fostering economic activity and an array of undertakings, including the dynamic tourism sector.

Through meticulous analysis of regression data concerning the availability of telecommunication networks and the internet in relation to the number of domestic tourists, it has been ascertained that the independent variable (Telecommunication Network and Internet) wields a remarkable influence on the dependent variable (Number of Domestic Tourists in the Archipelago), accounting for 70.1% of the

variance. Thus, the independent variable effectively elucidates the dynamics of the dependent variable.

With the calculated F value of 154.442, bearing a significance level of 0.000 < 0.05, it is evident that the regression model appropriately characterizes the variable denoting the number of domestic tourists. This signifies a tangible effect of the independent variable (Telecommunication Network and Internet) on the dependent variable (Number of Domestic Tourists in the Archipelago). Delving further into the regression output, it becomes apparent that the network coefficient boasts a value of 17025.865. This coefficient interpretation implies that for each incremental unit in the independent variable (Telecommunication Network and Internet), there is a corresponding increase of 17,025.865 units in the dependent variable (Number of Domestic Tourists in the Archipelago). The positively oriented regression coefficient further underscores that the influence of the independent variable (Telecommunication Network and Internet) on the dependent variable (Number of Domestic Tourists in the Archipelago) is inherently constructive.

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