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The Influence of Mobile Technology Adoption Rate on GenZ Productivity in the Digital Era

Elvin Nury Khirdany[1], Wahyu Liana[2]
[1,2] Bisnis Digital, Universitas Nazhatut Thullab Al-Muafa Sampang

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ABSTRACT

The development of digital technology has brought significant changes to the lives of Generation Z, particularly in the use of mobile technology to support their daily activities. Mobile technology has now become a primary means of communication, learning, and accessing information in the digital age. This study aims to determine the effect of mobile technology adoption on Generation Z productivity in the digital age. The study was conducted on 100 Generation Z students aged 16–18 years using quantitative methods and questionnaires. The results show that the level of mobile technology use among Generation Z is relatively high and has a positive influence on student productivity, particularly in terms of ease of access to information, time efficiency, and daily learning activities. The results of the research test indicate that the level of mobile technology adoption has a significant effect on Generation Z productivity with an influence value of 61.8%. This indicates that the higher the use of mobile technology, the higher the productivity of Generation Z in the digital age. However, the use of mobile technology also needs to be controlled to avoid negative impacts such as distraction and digital addiction.

Corresponding Author:

Elvin Nury Khirdany
Bisnis Digital,
Universitas Nazhatut Thullab Al-Muafa Sampang
Indoensia
Email: elvinnury19@gmail.com

1. Introduction

The development of information and communication technology in the digital era has brought significant changes to various aspects of human life. One example of this development is the increasing use of mobile devices such as smartphones and tablets, which have now become a primary necessity for supporting daily activities. Mobile technology is used not only as a communication tool but also as a means to quickly and conveniently access information, conduct transactions, learn, and even entertain. Information technology continues to evolve and is always needed by society as a supporting factor for various activities. This development of technological innovation must be accompanied by an awareness of the importance of personal data protection [1].

Generation Z, a group of individuals born between the mid-1990s and the early 2010s, is known as a generation that grew up and developed alongside advances in digital technology. This generation is characterized by a strong familiarity with the internet and mobile devices, often referred to as digital natives. Their high level of dependence on mobile technology makes this generation one of the largest user groups in

today's digital ecosystem [2]. A high level of dependence on mobile devices and social media as a means of communication, entertainment, learning, and social interaction [3].

Mobile technology adoption among Generation Z is influenced by various factors, such as ease of use, perceived benefits, availability of internet access, and social environmental influences. Furthermore, the development of increasingly diverse mobile applications, such as social media, e-commerce, and educational apps, has contributed to the increased use of mobile technology among this generation. However, this adoption rate is not always even, as differences in technology use persist, influenced by educational, economic, and cultural backgrounds [4].

On the other hand, excessive use of mobile technology can also have various negative impacts, such as digital addiction, decreased direct social interaction, and low awareness of personal data security. Excessive use of social media and mobile devices can lead to digital addiction, which impacts users' mental health and social behavior [5]. [6] stated that low user understanding of digital security can increase the risk of personal data misuse and the threat of cybercrime for mobile technology users.

Based on this description, research is needed to determine the level of mobile technology adoption among Generation Z and its impact on user productivity in the digital era. This research is expected to provide an overview of how mobile technology use can influence the effectiveness and productivity of Generation Z. Furthermore, the results of this study are expected to serve as a basis for developing strategies for more effective, productive, and responsible use of mobile technology in the digital era.

2. Research Method

This study uses a quantitative approach with a survey method to determine the effect of the level of mobile technology adoption on Generation Z productivity in the digital era. The population in this study is Generation Z who actively use mobile devices such as smartphones and tablets in their daily activities. The population and sample were taken from one of the schools in Sampang Regency. The sampling technique used purposive sampling with the criteria of respondents belonging to the Generation Z category and actively using mobile technology. The relationship between technology adoption and Generation Z productivity can be seen in Figure 1 below:

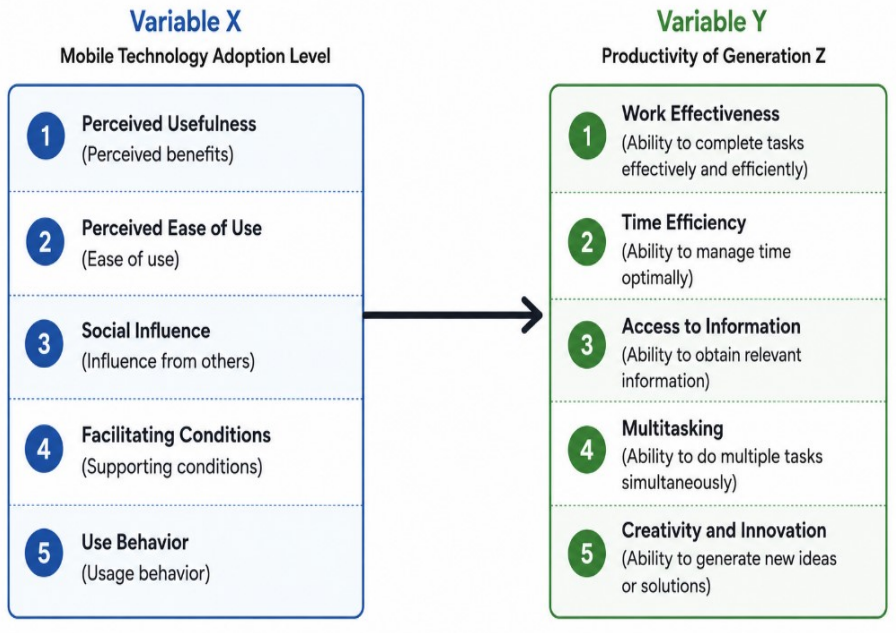

Figure 1. Relationship between Variable X and Y

This variable describes the level of acceptance and use of mobile technology by Generation Z. Variable X consists of five indicators: (a) perceived usefulness, indicates the extent to which mobile

technology is considered useful in assisting daily activities. (b) perceived ease of use, explains whether mobile technology is easy for users to understand and use. (c) social influence, indicates the influence of the surrounding environment, friends, family, or social media on the use of mobile technology. (d) facilitating conditions, explains the availability of supporting facilities such as internet access, smartphones, and technology networks. (e) use behavior, indicates the intensity and habits of users in using mobile technology on a daily basis.

Variable Y is Productivity of Generation Z. This variable describes the level of productivity of students or Generation Z after using mobile technology. Variable Y consists of five indicators: (a) work fffectiveness, the ability to complete tasks well and accurately. (b) time efficiency, the ability to optimally utilize time for studying or working. (c) access to information, the ease of obtaining needed information through mobile technology. (d) multitasking, the ability to perform several activities simultaneously. (e) creativity and innovation, the ability to generate new ideas or solutions through the use of digital technology. Overall, the diagram shows that the higher the adoption rate of mobile technology by Generation Z, the higher their productivity in daily activities, particularly in learning, communication, and the use of digital technology in the modern era.

3. Result and Discussion

This study was conducted on Generation Z students aged 16–18 who actively use mobile technology in their daily activities. The population in this study was 150 students, while the sample size was 100 respondents selected using a purposive sampling technique. The following are the characteristics of the respondents based on age, as seen in Table 1:

Tabel 1. Respondent Characteristics Based on Age

Age	Amount	Persentage
16 years	30	30%
17 years	45	45%
18 years	25	25%
Sum	100	100%

Based on the table, the majority of respondents were 17 years old, at 45%. This indicates that most respondents are in their productive adolescent years and actively use mobile technology for their daily learning and communication activities. Further respondent characteristics, based on gender, can be seen in Table 2 below:

Tabel 2. Respondent Characteristics Based on Gender

Gender	Amount	Persentage
Male	48	48%
Female	52	52%
Sum	100	100%

Based on the table above, the number of female respondents is slightly higher than that of male respondents. However, the difference between the two groups is not substantial, indicating a relatively balanced distribution of respondents by gender. This balanced composition suggests that the sample adequately represents both male and female participants, thereby reducing the likelihood of gender bias in the study findings. As a result, the collected data can be considered representative of the target population and suitable for further analysis.

The demographic distribution of respondents is important because it provides insight into the characteristics of the study participants and helps ensure that the research findings accurately reflect the population being investigated. A balanced representation of respondents enhances the reliability and validity of the results, particularly when examining factors related to technology adoption and usage behavior among Generation Z students. Since both male and female respondents are sufficiently represented, the findings can be interpreted with greater confidence.

In addition to gender distribution, another important characteristic examined in this study is the intensity of mobile technology usage among respondents. Understanding how frequently students use mobile devices provides valuable information regarding their level of engagement with digital technology and its role in their daily activities. Furthermore, the characteristics of respondents based on the intensity of mobile usage can be seen in Table 3 below.:

Tabel 3. Respondent Characteristics Based on Age

User Intensity	**Amount**	**Persentase**
1-3 hours/day	15	15%
4-6 hours/day	40	40%
6 hours/day	45	45%
Sum	100	100%

These results indicate that the majority of respondents use mobile technology for more than 6 hours per day. This indicates a high level of mobile technology use among Generation Z students.

3.1 The level of adoption of mobile technology among Generation Z

Based on the questionnaire results, the adoption rate of mobile technology among Generation Z is relatively high. This is evident from the average respondent responses for each X variable indicator in Table 4 below:

Table 4. The level of adoption of mobile technology among Generation Z

Indicator	**Mean**
Perceived Usefulness	4,32
Perceived Ease of Use	4,25
Social Influence	4,10
Facilitating Conditions	4,18
Use behavior	4,40
Average	4,25

Based on research conducted on 100 Generation Z students aged 16–18, the mobile technology adoption rate was high, with an average score of 4.25. This finding indicates that Generation Z students have a high level of acceptance of mobile technology in their daily lives. The high use of smartphones and digital applications indicates that mobile technology has become an essential part of communication, learning, entertainment, and productivity activities. Mobile devices are not only used as communication tools but also function as platforms that support access to information, online collaboration, educational content, and

various digital services. The widespread availability of internet connectivity and the increasing number of mobile applications have further encouraged students to integrate technology into many aspects of their daily routines.

The results also suggest that Generation Z students are highly familiar with digital environments and tend to adapt quickly to technological developments. As digital natives, they have grown up in an era where technology is readily accessible and continuously evolving. Consequently, they are comfortable using mobile devices for a variety of purposes, including completing academic assignments, participating in online learning activities, accessing social media, consuming digital content, and managing personal schedules. This level of familiarity contributes significantly to their positive perception of mobile technology and their willingness to adopt new applications and digital tools.

Furthermore, the high adoption rate demonstrates that students perceive mobile technology as useful, practical, and relevant to their needs. Mobile technology offers flexibility by enabling users to access information and services anytime and anywhere, making it an effective tool for supporting both academic and non-academic activities. The ability to communicate instantly, collaborate with peers, and access educational resources through mobile devices enhances learning efficiency and overall productivity. As a result, students increasingly rely on mobile technology to support their daily activities and achieve their educational goals.

This aligns with research by [7], which states that the use of digital technology among Generation Z has become an essential part of daily learning, communication, and productivity activities. The findings also support the argument that digital technology has transformed the way young people interact, learn, and access information in modern society. In addition, [8] explain that Generation Z has a high level of acceptance of mobile technology because technology is perceived as capable of supporting learning activities and daily digital needs. Therefore, the high mobile technology adoption rate observed in this study reflects the growing importance of digital technology in the lives of Generation Z students and highlights its role in supporting their academic, social, and personal development..

The results showed that the use behavior indicator had the highest average score compared to other indicators. This indicates that Generation Z students not only accept mobile technology but also actively use it in various daily activities. The high intensity of mobile technology use is influenced by easy internet access, the development of digital applications, and the need for increasingly fast and flexible communication. This statement is supported who stated that technology use is influenced by perceived benefits, ease of use, and technology use behavior [4]. [8] explained that high smartphone use among students is influenced by the need for access to information, communication, and flexibility in digital activities in the modern era.

3.2. Generation Z Productivity in Using Mobile Technology

The research results show that the use of mobile technology helps increase the productivity of Generation Z, as can be seen in Table 5 below:

Table 5. *Generation Z Productivity in Using Mobile Technology*

Indicator	Mean
Work Effectiveness	4,20
Time Efficiency	4,30
Information Access	4,45
Multitasking	4,15
Creativity and Innovation	4,22
Average	4,26

The results of the study showed an average score of 4.26, which is considered high. This indicates that mobile technology positively contributes to the productivity of Generation Z students, particularly in terms of information access, time efficiency, and effectiveness of daily activities.

The ability to access information indicator scored highest in the productivity variable. This indicates that mobile technology helps students obtain information more quickly and easily through the internet, social media, and other digital applications. Ease of access to information enables users to complete tasks more effectively and enhances independent learning abilities. These research findings are supported [9], who stated that digital technology can increase work effectiveness through real-time information access. [10] explained that the development of mobile technology has transformed people's activity patterns to become more flexible and efficient.

3.3. The Influence of Mobile Technology Adoption Rate on Generation Z Productivity

A simple linear regression analysis was conducted to determine the effect of mobile technology adoption on Generation Z productivity.

Regression equation:

$Y= 8,215 + 0,742X$

Description:

Y = Generation Z Productivity

X = Mobile Technology Adoption Rate

Based on the results of a simple linear regression analysis, the equation Y = 8.215 + 0.742X was obtained. The regression coefficient of 0.742 indicates that the level of mobile technology adoption has a positive influence on Generation Z productivity. This means that the higher the level of use and acceptance of mobile technology, the higher the user's productivity. These results align with research by [7], who stated that high digital technology use among Generation Z can increase the effectiveness of learning activities and user productivity. [11] explained that optimal smartphone use can help improve time efficiency, information access, and student academic performance.

These research findings are also supported by [4], who stated that technology that is easy to use and provides tangible benefits will improve user performance and productivity. According to UTAUT theory, the level of technology acceptance has a positive relationship with user usage behavior and performance outcomes.

The t-test results showed that the calculated t-value of 8.921 was greater than the t-table value of 1.984, with a significance level of 0.000 < 0.05. This proves that the level of mobile technology adoption significantly influences Generation Z productivity. Therefore, the research hypothesis is accepted. This finding aligns with research by [8], which states that the level of mobile technology acceptance among Generation Z significantly influences the effectiveness of learning and daily digital activities. Explain that active use of mobile devices can increase user productivity in completing tasks and quickly obtaining information. However, this study also emphasizes that mobile technology use must be controlled to avoid distractions and decreased learning focus [12].

3.4. t-Test Results

Based on the t-Test calculations, these can be seen in Table 6 below:

Table 6. t-Test Results

Variable	t Calculate	t Table	Sig
Mobile Technology Adoption Rate	8,921	1,984	0,000

The t-test results showed that the calculated t-value of 8.921 was greater than the t-table value of 1.984, with a significance level of 0.000 < 0.05. This proves that the level of mobile technology adoption significantly influences Generation Z productivity. Therefore, the research hypothesis is accepted. These results align with research by Viswanath Venkatesh et al., which explains that technology acceptance and use influence improved user performance and behavior in daily activities.

Furthermore, research by [8] shows that the level of mobile technology acceptance among Generation Z students is significantly related to the effectiveness of learning and users' digital activities. This study explains that the ease of use and benefits of mobile technology can increase student productivity in the learning process. These results are also supported by [7] who stated that active use of digital technology can improve time efficiency, information access, and productivity among Generation Z in academic activities and digital communication. In addition, explained that optimal smartphone use has a positive impact on student performance and productivity [11].

3.5. Coefficient of Determination (R^2)

Based on the calculation of the Determination Coefficient, it can be seen in Table 7 below:

Table 7. R^2 Result

Model	R Square
Linear regression	0,618

The significant influence of mobile technology adoption on Generation Z productivity can be seen from the coefficient of determination (R^2) of 0.618, or 61.8%. This indicates that Generation Z productivity is influenced by mobile technology adoption by 61.8%, while the remaining 38.2% is influenced by other factors such as individual motivation, learning environment, time management, and user psychology.

The results of this study also align with research by [3], which states that Generation Z has a high dependence on digital technology because it is perceived as being able to facilitate daily activities more practically and efficiently. Furthermore, research by [4] explains that technology that provides tangible benefits and is easy to use will improve user performance and productivity. However, excessive use of mobile technology can also have negative impacts such as distraction, decreased focus, and digital addiction. Several respondents stated that the use of social media and digital entertainment sometimes interferes with concentration while studying or working. This is supported by research by [5], which states that excessive use of digital technology can lead to digital addiction and impact user productivity. Explains that Generation Z, as digital natives, has a strong affinity for digital technology from an early age. Therefore, the use of mobile technology by students aged 16–18 needs to be positively guided to increase productivity in learning and daily activities [2].

4. Conclusion

Based on the results of a study conducted on 100 Generation Z students aged 16–18, it can be concluded that the adoption rate of mobile technology is high. This indicates that Generation Z has a high level of acceptance and use of mobile technology in daily activities, such as communication, learning, information seeking, and digital entertainment. The results also indicate that the adoption rate of mobile technology has a positive and significant impact on Generation Z productivity. The higher the level of use and acceptance of mobile technology, the higher the student's productivity, particularly in terms of time efficiency, ease of information access, learning effectiveness, and other digital activities.

The results of the regression and t-tests obtained a significance value of $0.000 < 0.05$, confirming the acceptance of the research hypothesis. Furthermore, the adoption rate of mobile technology has a 61.8% impact on Generation Z productivity, with the remainder influenced by factors outside the study. Thus, mobile technology plays a crucial role in supporting Generation Z productivity in the digital age. However, the use of mobile technology must be carried out wisely to avoid negative impacts such as distraction, decreased learning focus, and digital addiction.

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