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The Influence of Artificial Intelligence Technology, Infrastructure and Human Resource Competence on Internet Access Networks

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Abstract—The influence of artificial intelligence technology, infrastructure, and human resource competence on Internet access networks has been examined in a scientific publication, which is the outcome of a literature review in the information systems sector. The purpose of this study is to generate an influence hypothesis related to factors that can be applied in further investigations. The research's subjects include academic media, Google Scholar, Mendeley, and online libraries. Publicly accessible e-books and e-journals are the source of the research methodology that makes use of library institution searches. The following is a descriptive qualitative analysis of this article's findings: The influence of artificial intelligence technology on networks for Internet access, the influence of infrastructure on networks for Internet access, and the Influence of HR Competency on Internet Access Networks. Research findings regarding the impact of advances in infrastructure, human resource competence, and artificial intelligence technology on internet network access include improving user experience, extensive network scalability, increasing network efficiency and security, as well as increasing human resource knowledge and developing network architecture research findings regarding the impact of advances in infrastructure, human resource competence, and artificial intelligence technology on internet network access include improving user experience, extensive network scalability, increasing network efficiency and security, as well as increasing human resource knowledge and developing network architecture.

Keywords— Internet Access Network; Artificial Intelligence Technology; Infrastructure Resource Competence; Human Resource Competence; Information Systems.

I. INTRODUCTION

Over the last ten years, internet network access has experienced extraordinary developments. These developments have occurred in various ways, such as speed, availability, technological innovation, and how these developments have impacted society as a whole [1]. On this page, we will discuss the major changes that have occurred in internet network access conditions over the last ten years.

First, in the last ten years, internet speeds have increased rapidly. With the widespread adoption of technologies such as fiber optics, 4G, and 5G, higher internet speeds have become the norm. However, at the beginning of the decade, internet speeds commonly accessed by ordinary users were only around a few megabits per second [2]. With much faster download and upload speeds, users can easily access multimedia content and stream high-quality videos without interruption. Second, in the last ten years, the number of people who can access the Internet has increased significantly [3]. Many countries that previously did not have internet access have attempted to expand their network coverage. They do this by building new fiber optic cable infrastructure or providing wireless internet access [4]. This has enabled more people around the world to connect to the Internet, improving global connections and reducing the digital divide between developed and developing countries.

In addition, internet network access conditions have been greatly changed by technological advances. Developments such as the Internet of Things (IoT), cloud computing, and artificial intelligence have paved the way for new applications and services that require Internet connectivity [5]. For example, internet-connected smart homes allow users to use their smartphones to control electronic devices, temperature, and home security. In the same way, advances in virtual reality (VR) and augmented reality (AR) technologies have created new experiences in the gaming, education, and entertainment industries. In a social context, wider and cheaper internet access has changed the way we interact and communicate with each other [6]. Many people use social media in their daily lives because it allows them to connect with friends, family, and other communities. Apart from that, the Internet has also helped a lot in social and political change, such as social movements, demonstrations, and advocacy campaigns. Although the last ten years have seen major advances in access to networks, there are still challenges that need to be overcome. One of them is the digital difference between urban and rural areas [7]. Although the number of people who can access the Internet has increased, some remote and rural areas still face difficulties in getting reliable and cheap Internet access. As more and more data is generated and shared over the Internet, privacy and security issues are also becoming a concern.

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Artificial intelligence (AI) technology has drastically changed the landscape of Infrastructure and internet access in the last few decades. With its ability to process large amounts of data and generate a deep understanding of complex patterns, AI has become a major factor in increasing the efficiency, speed, and availability of internet access networks [8]. The impact of AI on network infrastructure has enabled the development of a variety of new solutions to improve the quality and reliability of Internet services [9]. Starting from automating network maintenance to predicting disruptions [10]. AI has enabled internet service providers to increase operational efficiency, reduce downtime, and improve the overall user experience.

Additionally, in terms of human resource competency, AI has changed the workforce landscape in the technology and telecommunications sectors [11]. IT professionals and network engineers must have a deep understanding of AI technology implementation and management to ensure optimal network infrastructure. However, while AI has brought many benefits, some challenges need to be overcome. One of them is the issue of data security and privacy, considering the increasing use of AI technology in managing Internet access networks. This report takes a closer look at the impact of artificial intelligence technology, infrastructure, and workforce skills on Internet access networks, as well as related challenges and opportunities. With a deeper understanding of AI's role in transforming telecommunications infrastructure, you can better prepare for an increasingly connected and automated future.

In light of the previous, the purpose of this article is to develop a hypothesis for additional study, specifically to identify the following three effects: Artificial Intelligence Technology's impact on Internet access networks, infrastructure's impact on Internet access networks, and Human Resource Competency's impact on Internet access networks.

II. Research Methodology

This article uses the "Literature Review" writing method or the "Library Research" and "Systematic Literature Review" (SLR) methodologies. These methods, which originate from indexing engines like Google Scholar, ScienceDirect, and Library Genesis, are examined qualitatively. The process of finding, assessing, and interpreting all available study evidence to produce findings to address particular research questions is known as systematic literature review (SLR) outcomes. [12].

Library research supports the development of hypotheses, which is an important component that must be tested. Through library research, researchers can study theories and previous research findings that are relevant to their research topic. It helps researchers build strong, supportive hypotheses and expands their understanding of the subjects they study. Reviews of the literature must be used consistently with methodological assumptions in qualitative analysis. A rationale for doing qualitative analysis is the exploratory nature of the research. [13].

Based on the problem formulation, related research, and discussion, the rationale for this article has been developed as in Figure 1. The framework of thinking: artificial intelligence technology, infrastructure, and human resource competence have an impact on internet access networks. Apart from the three independent variables that affect the dependent variable (Internet access network), there are other variables, namely:

- Service Users *(demand)*: [14]–[18]
- Government Regulations/Laws: [19]–[22]
- Economic/Financial Conditions: [23]–[26]
- Competitors: [27]–[30]

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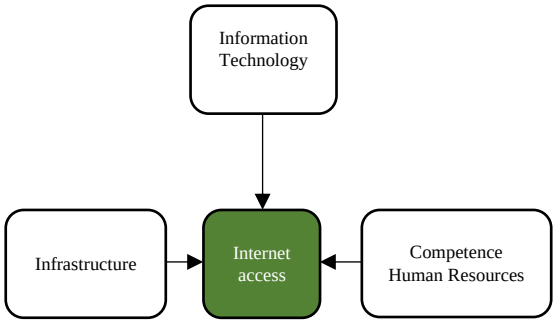

Figure 1. Framework of Thought

III. Result and Discussion

Based on the background, objectives, and methods, the results of this article are as follows:

A. *Internet Access Network*

An important element of contemporary telecommunications technology is primarily the internet access network. With internet access, data transfer and communication are faster and more affordable [31]. All aspects can also benefit from secure voice and video conferencing services from short- and long-range internet access networks, high-speed data transfers, and other features [24]. The ability of an Internet access network to handle large amounts of data while reducing costs associated with long-distance communications. In addition, this technology makes it easier for businesses to reach audiences worldwide and access various online services using satellite or fiber optic connections. An internet access network is the infrastructure that allows users to connect to the Internet. It is a critical part of modern telecommunications infrastructure that connects end users with internet service providers (ISPs) and internet resources around the world [32]. The main components of an internet access network include:

1) End Users: These are individuals or organizations that access the Internet. They can use various devices such as computers, smartphones, tablets, or IoT (Internet of Things) devices.

2) Local Area Network (LAN): A network consisting of connected devices within a limited area such as a home, office, or school. Users connect to their local network using Ethernet cables or wireless networks (Wi-Fi).

3) Monitoring device (modem/router): This device acts as a gateway between the local network and an external network such as the Internet [33]. A modem converts data signals from a format compatible with a local area network to a format that

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can be sent over a transmission medium such as coaxial cable, fiber optics, or radio waves.

4) ISP Access Network: This is a network owned and operated by an Internet Service Provider (ISP). It connects to many customer monitoring devices and directs internet traffic to and from end users [34].

5) Internet Backbone: The core part of the Internet infrastructure that connects the various access networks of major ISPs and content providers around the world. The Internet backbone consists of a series of fiber optic cables distributed across the globe and is the backbone of global connectivity. A practical example of the use of an internet access network is in the family context, where the internet access network is used to meet the daily internet needs of the family members who live at home [35]. Wireless routers serve as the starting point where devices such as computers, laptops, smartphones, and others can connect to the Internet. In situations like this, internet speed and connection are very important, especially if many family members use the Internet at the same time. The use of strong passwords and network encryption is critical to network security.

Furthermore, in an office environment, where employees communicate and are productive via the Internet network. Wired networks can be used to connect computers and other network devices via wireless routers. Business applications, email, and communication platforms such as video conferencing require high internet speed and stability. Network security is also very important in this case. Firewalls, VPNs (Virtual Private Networks), and strict security policies can help protect a business's personal information.

Furthermore, in the campus context, internet access networks are very important to support academic activities and enable information sharing between students, teachers, and employees. Campus networks usually cover large areas, such as libraries, laboratories, lecture buildings, and other public areas [36]. A robust network infrastructure and good scalability are required to handle a large number of users, in addition to providing wireless connections throughout the campus. In this case, reliability, speed, and adequate capabilities are essential. Protecting students' personal data and institutional information should also be a top network security priority.

B. Internet Access Network Technology

DSL (Digital Subscriber Line): DSL uses existing copper wire telephone lines to transmit digital data, allowing users to access the Internet at high speeds over a regular telephone line connection. (2) Coaxial Cable (Cable): This technology uses coaxial cable TV cable infrastructure to provide an internet connection [37]. This cable allows high access speeds and is usually used in urban areas. (3) Optical Fiber: Fiber optic-based connections use fiber optic cables that transmit data in the form of light. This is the most advanced technology that provides the highest speed and bandwidth but is usually more expensive to implement [38]. (4) Wireless Networks: This includes Wi-Fi, LTE, and 5G. They allow wireless internet access and are very popular for mobile connections and wireless internet access in homes and offices.

In the ever-growing digital era, fast and reliable internet access has become an important need for everyone around the world [39]. Satellite internet and 5G networks are the two technologies currently most popular for improving internet connectivity. In recent years, many private companies have launched small constellations of satellites in low orbit, as SpaceX has done with its Starlink project. These constellations consist of hundreds, if not thousands, of satellites that work together to provide internet connectivity around the world [40]. This method has advantages, namely wider internet coverage and higher speeds compared to conventional satellite, but satellite internet has some problems. One of the main problems is high latency because signals have to travel long distances into space and back again [41]. Additionally, high infrastructure and technology costs are often a barrier to providing cheap satellite internet access to people around the world.

Additionally, 5G networks have been a hot topic of discussion in recent years. 5G is the fifth generation of mobile technology that offers higher internet speeds, greater capacity, and faster response times compared to the previous generation, 4G [42]. 5G enables the development of advanced technologies such as autonomous cars, the Internet of Things (IoT), and augmented reality (AR) that require reliable and responsive connectivity. This can be achieved through the use of a wider frequency spectrum, which makes it possible to serve more devices simultaneously without reducing internet speed [43].

C. Challenges and Innovation

Capacity and Speed: As demand for internet-based services such as video streaming and cloud computing increases, there continues to be pressure to increase the capacity and speed of internet access networks [44]. Affordability: Challenges remain in ensuring affordable internet access for everyone around the world, especially in rural and developing areas. Security: Protection against cyber attacks and user privacy are primary concerns in the development of internet access networks [45]. Internet of Things (IoT): The growth of IoT places additional pressure on internet access networks as more connected devices require greater bandwidth and connectivity [33]. With continued innovation in network technology and investment in telecommunications infrastructure, internet access networks will continue to develop to support increasingly complex and rapidly growing digital communications needs [46]. The following strategies and solutions can be used to overcome Internet access network problems, such as capacity, affordability, security, and Internet of Things integration:

1) Increased Network Capacity: Investments in updated physical infrastructure, such as fiber cabling, should be made to increase optical network capacity and speed [47]. Then, to improve network scalability and disruption, innovative wireless technologies, such as mesh wireless networks or solar-powered blimp technology, are used, along with software resolution networking (SDN) technologies and cloud-based networks.

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2) Increase Affordability: To increase affordability, you must reduce infrastructure costs, use more efficient technology, encourage internet service providers to invest in underserved areas, and use innovative business models, such as sharing infrastructure costs between internet service providers [48].

3) Improved Security: To improve security, one should use artificial intelligence-based security solutions, such as artificial intelligence-based intrusion detection and network behavior analysis [49]. To detect and prevent security attacks, then carry out real-time network monitoring using an artificial intelligence system that can find unusual threats and attack patterns, as well as carry out training and security awareness for network users to reduce the risk of phishing attacks, malware, and other attacks.

4) Internet of Things (IoT): Integration To integrate the Internet of Things, it is first necessary to optimize the network infrastructure to allow many IoT devices to be connected and accessible, then create a secure and efficient standard communication protocol for connecting IoT devices, and then use analytics data and artificial intelligence to process and manage the vast amounts of data generated by IoT devices [50].

5) Innovation in Problem Identification: To provide innovation in problems, one must apply advanced network monitoring technology using artificial intelligence and data analytics to identify network problems proactively [51]. Then, it uses machine learning techniques to analyze the data and find patterns that indicate network problems, such as interference or poor performance. Apart from that, regional communities must be involved in identifying these patterns.

D. Artificial Intelligence Technology

The development of artificial intelligence (AI) technology has become a major subject in the world of modern technology [52]. AI has penetrated various fields, from industrial automation to medicine. In this paper, we present an up-to-date overview of the challenges and prospects in AI development. We discuss the latest advances in machine learning, deep learning, reinforcement learning, and AI applications in various industries. We also evaluate the ethical and social barriers that arise as AI adoption increases. Finally, we summarize the future potential of AI and research directions that need attention. AI has become the center of attention in various industries and disciplines. From business process automation to the development of autonomous vehicles, AI has opened the door to new possibilities. In this article, we will explore some important aspects of artificial intelligence technology and explore its paradigm-shifting impact.

AI can be applied in a variety of industries. One of the main areas where AI has demonstrated its impact is in the manufacturing industry [53]. With integrated AI systems, production processes can be significantly optimized, leading to greater efficiency and reduced production costs. Additionally, in the healthcare sector, AI is used in medical diagnosis, drug development, and patient monitoring to improve the quality of care and quickly identify potential health problems [54]. Despite its tremendous potential, AI also poses some serious challenges. One of them is the issue of data privacy, where the use of AI to collect and analyze personal information can threaten individual privacy. Additionally, attention should also be paid to the ethical implications of AI use, including issues of fairness and bias that may occur in AI-based decision-making. Artificial intelligence technology has been studied by several researchers [55]–[60].

E. Infrastructure

Internet access network infrastructure plays a crucial role in driving economic and social growth in the contemporary era [61]. We present an in-depth review of the role, challenges, and prospects of internet access network infrastructure in facing global demands for fast, reliable, and inclusive connectivity. By considering technical, economic, and social factors, this article outlines the importance of continued investment in Internet access network infrastructure as a key foundation for digital progress. Internet access network infrastructure is the backbone of digital transformation throughout the world [62]. With the increasing demand for fast and reliable internet access, strong infrastructure is the key to meeting this need. This article aims to outline the important role of internet access network infrastructure in supporting digital growth and explain the challenges faced and prospects.

Internet access network infrastructure is the main foundation for the growth of the digital economy, enabling access to new information, services, and opportunities [63]. With strong infrastructure, digital innovation can develop rapidly, create new jobs, and increase productivity in various economic sectors. In addition, internet access network infrastructure also plays an important role in improving access to education, health services, and e-government, all of which are important elements of digital inclusion and sustainable social development [34].

Although the importance of internet access network infrastructure is widely recognized, there are still several challenges that need to be overcome in its development. One of the main challenges is the accessibility and reliability of infrastructure in rural and remote areas, where construction and maintenance costs are often high while per capita income is low. In addition, regulatory factors, data security, and privacy are also important considerations in developing a successful Internet access network infrastructure. Cooperation between government, the private sector, and civil society is needed to address these challenges effectively.

With the continued increase in demand for fast and reliable connectivity, the future prospects for internet access network infrastructure remain bright. Technological innovations such as 5G networks, satellite internet and related technologies will play a critical role in improving the quality and coverage of internet infrastructure around the world [64]. In addition, a sustainable approach to the development of internet access network infrastructure, which takes into account economic, social, and environmental aspects, will be key in ensuring that the benefits of digital growth can be enjoyed equally by everyone throughout the world.

Rebuilding or updating the necessary physical infrastructure is the first step in improving internet infrastructure. Covering

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fiber optic cables, communications towers, and wireless base stations in unserved areas is part of this. In some cases, this involves building new infrastructure in remote or isolated areas that previously did not have internet access so that communities can experience the benefits directly [65]. For example, better access to information, education, and online educational resources will help increase literacy levels, open up more educational opportunities, and empower people to participate in education. Internet access network infrastructure has been studied by several researchers [24], [32], [66]–[68]

F. Human Resources Competence

Human resource (HR) competency has become a major focus for organizations that want to maintain their competitiveness in an increasingly complex and rapidly changing market [69]. In the modern knowledge economy, the human ability to adapt, learn, and innovate is key to achieving competitive advantage. Therefore, organizations need to understand the concept and implement effective HR competency development strategies. HR competency refers to the collection of knowledge, skills, attitudes, and behavior possessed by individuals in an organization [70]. It includes the technical and non-technical abilities required to perform tasks effectively and achieve organizational goals. Types of HR competencies can be divided into two main categories: technical competencies (for example, expertise in the use of technology or programming languages) and behavioral competencies (such as communication, leadership, and teamwork skills).

Organizations can use a variety of strategies to develop HR competencies, including training and development, selective recruitment, project assignments, mentoring, and experience-based learning [71]. It is important to adapt the development strategy to the specific needs of the organization and integrate it into the culture and structure of the organization. Research has shown that HR competencies have a significant impact on organizational performance. Organizations with competent human resources tend to be more innovative, productive, and adaptive to environmental changes. Apart from that, strong HR competencies can also increase employee satisfaction, retention, and the organization's brand image. Managers and organizational leaders need to recognize the importance of investing in HR competency development as a strategy to achieve long-term competitive advantage. They must systematically evaluate and identify competency needs, design relevant development programs, and measure their impact on overall organizational performance. Case Study: Initiative to Improve HR Capabilities at Telecommunications Company XYZ, a leading company in the telecommunications sector operating in a developing country. This company realizes how important it is to develop superior human resource competencies in the face of increasingly fierce competition and rapid technological developments [72]. Therefore, they initiated a comprehensive HR competency development initiative to enhance their employees' abilities to face industry challenges.

HR competency development initiatives include needs analysis, implementation of training and certification programs, internal and external training, and career development programs. XYZ Telecommunications Company achieved several significant successes as a result of this initiative, including Improved Performance: Employees who underwent training and certification improved their performance. They better understand the latest telecommunications technology, can handle technical issues more efficiently, and provide better service to customers. Employee retention: HR competency development programs like this increase employee retention. If employees feel valued and encouraged to develop, they tend to stay with the company longer. Lastly, innovation and efficiency: Employees with enhanced competencies are more creative in optimizing business processes, increasing efficiency, and finding new solutions. This helps businesses survive in a changing market. Human resource competencies have been studied by several researchers [73]–[77].

G. Review Relevant Articles

As a basis for determining the research hypothesis that we conducted, we tried to review related research by explaining the results of previous research, the research object, research problems, and differences in solutions provided from related previous research, as in Table I.

TABLE I
RELATED RESEARCH RESULTS

Paper	Previous Research Results	Similarities	Differences With This Article	H
[8]	Artificial intelligence technology for telecommunications has a positive and significant impact on industrial networks.	Artificial Intelligence Technology has an impact on Internet Networks for telecommunications.	Artificial Intelligence technology is impacting the telecommunications of several industrial networks.	H1
[11]	Artificial Intelligence and machine learning technology have a positive and significant impact on delivery management.	Artificial Intelligence technology has an impact on human resource management.	Artificial Intelligence Technology has an impact on Internet Access Networks.	H1
[55]	Artificial Intelligence Technology Infrastructure has a positive influence on preoperative planning.	Infrastructure impacts the Internet Access Network for planning	Technology Infrastructure Intelligence impacts Internet Access Networks	H2
[59]	Artificial Intelligence technology has a positive influence on microcontroller simulation systems.	Artificial Intelligence technology has an impact on Internet Access Networks for microcontroller simulation.	Artificial Intelligence technology has an impact on microcontroller simulation.	H2
[33]	Human Resource Competency has a	Human Resource	Resource Competency	H3

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Paper	Previous Research Results	Similarities	Differences With This Article	H
	positive and significant influence on future technology trends.	Competency has an impact on future technology trends	impacts Private Internet Access Networks	
[53]	Human Resource Competency has a positive and significant influence on the manufacturing system.	Human Resource Competency has an impact on manufacturing Internet Access Network systems.	Resource Competency impacts human centricity assessment	H3

The basis of the theoretical study that we carried out previously, the discussion of this literature review article, is to review related articles, analyze the impact between variables, and create a conceptual thinking research plan.

A) Impact of Artificial Intelligence Technology on Internet Access Networks

The purpose of this literature review article's discussion, which is based on theoretical studies, is to examine pertinent publications, evaluate the relationship between variables, and develop a conceptual study plan. One of the most significant technological advancements of our century is artificial intelligence, which is revolutionizing how we interact, work, and live. [78]. In the context of internet access networks, the presence of AI also has a significant impact. This article will explain some of the main impacts of AI technology on internet access networks. Artificial intelligence technology has an impact on internet access networks. This is in line with researchers [55]–[60].

1) Increased Network Efficiency: By using AI in network management, internet service providers can improve the efficiency of their infrastructure. AI can monitor network traffic in real-time, identify usage patterns, and allocate resources dynamically. This can reduce network downtime, increase access speed, and optimize overall network performance.

2) Security Improvements: AI can also be used to improve internet network security. AI systems can monitor network activity to detect cyber attacks, such as DDoS attacks or malware. With predictive analysis, AI can identify potential threats before they cause serious damage to the network.

3) Improved User Experience: With the ability to learn user behavior patterns, AI can provide a more personalized and customized user experience. For example, internet services can use AI to recommend content or services based on individual user preferences, increasing overall user satisfaction.

4) Service and Infrastructure Optimization: Through in-depth data analysis, AI can help internet service providers optimize their infrastructure. By predicting user demand and usage patterns, service providers can allocate resources more efficiently, reduce operational costs, and increase network scalability.

5) Ethical and Privacy Challenges: Even though it provides many benefits, the use of AI in internet access networks also raises several challenges, especially related to privacy and ethical data use. Strict regulations are needed to ensure that user data is protected and that decisions made by AI systems do not harm certain individuals or groups.

Machine Learning can be used in internet access network optimization to analyze network traffic data, predict usage patterns, and optimize network resource allocation. Here are some examples of Machine Learning methods in use:

1) Network Traffic Prediction: Machine Learning can help predict future network traffic patterns based on historical data. By understanding these patterns, internet service providers can optimize resource allocation and avoid network congestion.

2) Network Capacity Management: Machine Learning Algorithms can discover unusual usage patterns, optimize bandwidth allocation, and avoid network overload. This allows internet service providers to monitor network usage in real-time and manage network capacity more efficiently.

3) Network Disruption Prediction: Machine teaching can help find and predict possible network disruptions or failures. Machine learning algorithms can provide early warning to internet service providers to take preventive action or fix problems before users notice them by analyzing historical data and environmental elements.

4) Network Automatic Learning: Machine learning algorithms can be used to optimize network settings automatically. For example, algorithms can learn to optimize network routes based on traffic conditions and signal quality, which improves overall network speed and performance.

Optimizing internet access networks with AI technology and algorithms can increase network speed, quality, and efficiency. Internet service providers can provide a better user experience by intelligently analyzing data and making decisions based on identified patterns. However, the use of this technology has several limitations that must be considered. Some of them are:

1) Dependence on Quality Data: Machine learning algorithms require high-quality data to produce accurate results. If the data used is unrepresentative or problematic, the results produced by the algorithm can be unreliable.

2) High Computational Resource Requirements: Training and implementing complex machine learning algorithms requires a lot of computing resources, which can be a challenge in widespread implementation, especially in resource-constrained environments.

3) Interpretability: Some machine learning algorithms, such as neural networks, can be difficult to interpret, meaning the decisions they make may be difficult for humans to explain or understand.

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4) Privacy and Security: Because the use of AI technology to optimize internet access networks can involve the analysis of sensitive data, it is important to consider the privacy and security issues associated with the collection, storage, and use of user data.

B) Impact of Infrastructure on Internet Access Networks

Infrastructure plays a crucial role in determining the quality and availability of internet access networks. In this digital era, where internet connectivity is the backbone for various activities, a good understanding of the impact of infrastructure on internet access networks is very important. This article will discuss some of the main impacts of Infrastructure on Internet access networks. Infrastructure has an impact on internet access networks. This is in line with research conducted by [24], [32], [66]–[68].

1) Availability and Quality of Service: Solid and quality infrastructure is the main factor in determining the availability and quality of internet services. Areas that have good infrastructure tend to have faster, more stable, and more reliable internet access. In contrast, areas with less developed infrastructure may experience problems such as slow speeds or frequently dropped connections.

2) Providing Internet Access in Remote Areas: Infrastructure also affects the ability to provide Internet access in remote or rural areas. In areas with good infrastructure, the cost of installing an internet network tends to be lower and more easily accessible to residents. However, in remote areas with limited infrastructure, providing internet access can be more difficult and expensive.

3) Network Scalability: Flexible and adaptable Infrastructure plays an important role in improving the scalability of internet access networks. With continued growth in the number of users and demand for faster internet services, infrastructure that can be easily expanded and upgraded allows service providers to respond to demand more effectively.

4) Technology Development: Advanced Infrastructure also encourages the development of new technology in internet access networks. For example, investments in fiber optic or 5G networks enable unprecedented increases in network speed and capacity, opening the door to new applications and services that take advantage of faster and more stable Internet connections.

5) Financial and Regulatory Challenges: Despite its importance, internet infrastructure development is often faced with financial and regulatory challenges. Building sophisticated infrastructure requires large investments, and sometimes complex regulations can hinder progress in providing equitable and quality internet services.

Public-private partnerships and community-based initiatives can help address infrastructure issues. The following are some strategies that can be used:

1) Public-Private Partnership: Collaboration between the private sector and government can be a good solution to overcome infrastructure problems. The government can work with private companies to build, maintain, and operate the necessary infrastructure [79]. This collaboration can accelerate infrastructure development and reduce the financial burden on the government because the resources and expertise of both parties are combined.

2) Community-Based Funding: An innovative funding alternative is community-based initiatives such as infrastructure bonds or crowdfunding. This initiative allows private or public investors to invest directly in infrastructure projects through the purchase of bonds or small contributions [80]. Initiatives like these can help raise the necessary funds to finance projects without relying entirely on government budgets.

C) Impact of Human Resource Competency on Internet Access Networks

In an increasingly connected digital era, human resource (HR) competence plays a key role in the development and maintenance of an efficient and reliable internet access network [81]. This article will explore the impact of HR competency levels on internet access networks.

1) Technical Knowledge and Skills: Human resources who are skilled in the field of information and communication technology (ICT) play an important role in managing, maintaining, and updating internet access networks. In-depth knowledge of network protocols, hardware and software infrastructure, and network security are important aspects needed to maintain network performance and security.

2) Problem Solving and Disruption Handling: HR's ability to solve problems and handle disruptions efficiently is crucial in maintaining the availability of internet access networks. Trained human resources can quickly identify and resolve issues, reducing network downtime and increasing user satisfaction.

3) Innovation and Development: Creative and innovative human resources can bring progress in the development of internet access networks. They may find new solutions to improve network speed, reliability, and security, as well as implement the latest technologies, such as 5G networks or the Internet of Things (IoT), to improve efficiency and user experience.

4) Professional Training and Development: Investment in training and professional development for human resources is an important step in ensuring that they remain relevant with the rapid development of internet access network technology. Regular training on new technologies, best practices, and cyber security can help improve HR competency and keep networks secure and high-performing.

5) Challenge of Skilled Labor Shortage: One of the main challenges facing the Internet access network industry is the shortage of skilled labor. The demand for trained human resources continues to increase, while the supply of qualified workers is often insufficient. This emphasizes the importance

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of investing in education and training to produce high-quality human resources in the field of information technology.

Employee capabilities have a direct impact on improving network performance and reliability, such as fast and efficient handling of technical problems: the team managing the network can find and fix technical issues quickly [82]. They understand the latest technology, can solve complex problems, and understand network systems well. In this way, the time required to fix problems can be reduced significantly, thereby improving the performance and reliability of the internet access network. For example, an experienced network technician can quickly inspect and repair problems with failed network hardware [83]. They may have a deep understanding of network device configurations and can perform accurate analysis to find the source of the problem. In this situation, high human resource capabilities enable technical disruption to be handled quickly and efficiently, allowing immediate Internet network recovery. Human resource competency has an impact on internet access networks. This is in line with research conducted by researchers [73]–[77].

IV. CONCLUSION

In light of the goals, findings, and debate, this article's conclusion proposes a hypothesis for additional study. H1: That internet access networks are influenced by artificial intelligence technology makes sense and may be true. However, it is important to remember that many other factors also influence network development, and artificial intelligence technology is just one component that helps improve network performance and quality. H2: The fact that infrastructure affects internet access networks is true. The physical network infrastructure, hardware, and software that support it are critical to providing good connectivity and adequate quality internet service. Building a strong and reliable infrastructure is an important step in increasing internet access and meeting people's connectivity needs. H3: Human resource competence influences internet access networks. Human resource expertise, knowledge, and capabilities in designing, managing, and maintaining Internet networks are very important to ensure network quality, performance, and security. Investment in training and development of high-quality human resources in this field will have a positive impact on the development of Internet access networks.

REFERENCES

[1] R. G. Brereton, "Ten years of Heritage Science," *Herit. Sci.*, vol. 11, no. 1, Dec. 2023.
[2] P. Sahni, M. Arora, and J. Sharma, "Study of TCP Congestion Protocols for Long Distance Internet Link."
[3] M. Ciupac-Ulici, D. Beju, V. Bresfelean, and G. Zanellato, "Which Factors Contribute to the Global Expansion of M-Commerce?," *Electronics*, vol. 34, no. 2, p. 1181, May 2022.
[4] S. Silvester and S. Kurain, "Dual-blend insight recommendation system for e-commerce recommendations and enhance personalization," *Indones. J. Electr. Eng. Comput. Sci.*, vol. 34, no. 2, p. 1181, May 2024.
[5] Y. Liu, L. Wang, Z. Lu, K. Du, and G. Shou, "A Stateless Design of Satellite–Terrestrial Integrated Core Network and Its Deployment Strategy," *IEEE Trans. Netw. Serv. Manag.*, vol. 21, no. 1, pp. 953–966, Feb. 2024.
[6] D. Bhardwaj and M. Kumar, "Evolution of impact of Social media using the COPRAS Method," *2023 1st Int. Conf. Cogn. Comput. Eng. Educ.*, 2023.
[7] P. K. - and A. S. -, "Challenges and Issues of Integrating Information and Communication Technologies in Higher Education in Rural Areas-A Review," *Int. J. Multidiscip. Res.*, vol. 5, no. 6, Nov. 2023.
[8] R. E. Balmer, S. L. Levin, and S. Schmidt, "Artificial Intelligence Applications in Telecommunications and other network industries," *Telecomm. Policy*, vol. 44, no. 6, p. 101977, 2020.
[9] P. Reidy, *The internet age*, vol. 42, no. 2. 2013.
[10] M. Awaludin and H. Mantik, "Penerapan Metode Servqual Pada Skala Likert Untuk Mendapatkan Kualitas Pelayanan Kepuasan Pelanggan," *J. Sist. Inf. Univesitas Suryadarma*, vol. 10, no. 1, 2023.
[11] J. Martin, C. Bode, and H. Stuckenschmidt, "Journal of Purchasing and Supply Management Artificial intelligence and machine learning in purchasing and supply management: A review of the literature with expert interviews," *J. Purch. Supply Manag.*, no. xxxx, p. 100896, 2024.
[12] B. Kitchenham, O. Pearl Brereton, D. Budgen, M. Turner, J. Bailey, and S. Linkman, "Systematic literature reviews in software engineering - A systematic literature review," *Inf. Softw. Technol.*, vol. 51, no. 1, pp. 7–15, 2009.
[13] L. E. Downie *et al.*, "TFOS Lifestyle - Evidence quality report: Advancing the evaluation and synthesis of research evidence," *Ocul. Surf.*, vol. 28, pp. 200–212, 2023.
[14] Y. Shaengchart and T. Kraiwanit, "Starlink satellite project impact on the Internet provider service in emerging economies," *Res. Glob.*, vol. 6, no. May, p. 100132, 2023.
[15] Q. Gao, Q. Wang, and C. Wu, "Construction of enterprise digital service and operation platform based on internet of things technology," *J. Innov. Knowl.*, vol. 8, no. 4, p. 100433, 2023.
[16] L. N. Chesuh, J. Manuel, and A. Perez, "Improve Quality of Service for the Internet of Things using Blockchain & Machine Learning Algorithms.," *Internet of Things*, p. 101123, 2024.
[17] C. Dworschak, E. Heim, N. Kuhn, J. Schwager, A. Tröster, and A. Maercker, "User-centered development of an internet-based CBT intervention for the treatment of loneliness in older individuals," *Internet Interv.*, vol. 35, no. August 2023, 2024.
[18] T. Kwon *et al.*, "How to decentralize the internet: A focus on data consolidation and user privacy," *Comput. Networks*, vol. 234, no. June, p. 109911, 2023.
[19] Q. Zhang, C. W. Phang, and C. Zhang, "Does the internet help governments contain the COVID-19 pandemic? Multi-country evidence from online human behaviour," *Gov. Inf. Q.*, vol. 39, no. 4, p. 101749, 2022.
[20] Y. Xu, L. Shangguan, and B. Xia, "Does Internet use affect public risk perception? — From the perspective of political participation," *Data Inf. Manag.*, no. November, p. 100059, 2023.
[21] T. Garrett, L. E. Setenareski, L. M. Peres, L. C. E. Bona, and E. P. Duarte, "A survey of Network Neutrality regulations worldwide," *Comput. Law Secur. Rev.*, vol. 44, p. 105654, 2022.
[22] J. Singh, K. Steele, and L. Singh, *Combining the Best of Online and Face-to-Face Learning: Hybrid and Blended Learning Approach for COVID-19, Post Vaccine, & Post-Pandemic World*, vol. 50, no. 2. 2021.
[23] J. Valentín-Sívico, C. Canfield, S. A. Low, and C. Gollnick, "Evaluating the impact of broadband access and internet use in a small underserved rural community," *Telecomm. Policy*, vol. 47, no. 4, p. 102499, 2023.
[24] K. Ackermann, S. Awaworyi Churchill, and R. Smyth, "High-speed internet access and energy poverty," *Energy Econ.*, vol. 127, no. PB, p. 107111, 2023.
[25] V. Vatskel, A. Biloshchytskyi, A. Neftissov, O. Kuchanskyi, Y. Andrashko, and I. Sachenko, "Energy-efficient Internet of Things using LoRa Network and modular universal programmable controller in bee apiary management," *Procedia Comput. Sci.*, vol. 231, pp. 715–720, 2024.
[26] E. Coyne, V. Frommolt, H. Rands, V. Kain, and M. Mitchell, "Simulation videos presented in a blended learning platform to improve Australian nursing students' knowledge of family assessment," p. #pagerange#, 2018.
[27] S. Scherrer, S. Tabaeiaghdaei, and A. Perrig, "Quality competition among internet service providers," *Perform. Eval.*, vol. 162, no. October, p. 102375, 2023.
[28] K. Szopik-Depczynska and K. Cheba, "The impact of Internet on

DOI : https://doi.org/10.25139/inform.v9i2.8109

marketing activity in R&D departments in Poland," *Procedia Comput. Sci.*, vol. 192, pp. 5030–5038, 2021.
[29] P. Rodriguez-Garcia, Y. Li, D. Lopez-Lopez, and A. A. Juan, "Strategic decision making in smart home ecosystems: A review on the use of artificial intelligence and Internet of things," *Internet of Things (Netherlands)*, vol. 22, no. March, p. 100772, 2023.
[30] E. J. Oughton, W. Lehr, K. Katsaros, I. Selinis, D. Bubley, and J. Kusuma, "Revisiting Wireless Internet Connectivity: 5G vs Wi-Fi 6," *Telecomm. Policy*, vol. 45, no. 5, p. 102127, 2021.
[31] M. Awaludin and A. Gani, "Pemanfaatan kecerdasan buatan pada algoritma k-means klastering dan sentiment analysis terhadap strategi promosi yang sukses untuk penerimaan mahasiswa baru," *JSI (Jurnal Sist. Informasi) Univ. Suryadarma*, vol. 11, no. 1, pp. 1–6, 2024.
[32] Y. Cui, Q. Zhao, T. Glauben, and W. Si, "The Impact of Internet Access on Household Dietary Quality: Evidence from Rural China1," *J. Integr. Agric.*, vol. 23, no. 2, pp. 374–383, 2023.
[33] F. Eusufzai, A. N. Bobby, F. Shabnam, and S. R. Sabuj, "Personal internet of things networks: An overview of 3GPP architecture, applications, key technologies, and future trends," *Int. J. Intell. Networks*, vol. 5, no. June 2023, pp. 77–91, 2024.
[34] M. Awaludin and N. E. Yolanda, "Analysis of CEISA Services User Satisfaction Using the EUCS Method in The Directorate General of Customs and Excise," *Conf. Senat. STT Adisutjipto Yogyakarta*, vol. 4, 2018.
[35] N. Chand and D. M. Raj, "Challenges Of Supply Chain Management On Provision Of Internet Services In Rural Areas During Covid-19 Pandemic," *Int. J. Creat. Res. Thoughts*, 2020.
[36] J. Zhang, "Design of Campus Network Security System Based on Network Information Security," *Int. Symp. Parameterized Exact Comput.*, pp. 1194–1197, 2022.
[37] V. Kumar, K. Kumar, and M. Hussain, "Enhanced Generic Framework for Privacy Preservation in Internet of Things Networks," *Procedia Comput. Sci.*, vol. 230, no. 2023, pp. 475–485, 2023.
[38] Y. Tan, J. Wang, and J. Liu, "Strengthening Network Slicing for Industrial Internet with Deep Reinforcement Learning," *Digit. Commun. Networks*, 2023.
[39] O. Sowande, F. Idachaba, S. Ekpo, N. Faruk, M. Uko, and O. Ogunmodimu, "Sub- 6 GHz 5G Spectrum for Satellite-Cellular Convergence Broadband Internet Access in Nigeria," *Int. Rev. Aerosp. Eng.*, vol. 15, no. 2, pp. 85–96, 2022.
[40] M. Bod, P. Sojoodi, and L. Mohammadi, "SWOT Analysis of the Mega Constellation Technology and Satellite Internet," *2023 31st Int. Conf. Electr. Eng.*, pp. 1–8, 2023.
[41] K. Sornya, O. Sreytouch, P. Sothea, and C. Morokot, "Study on Footprint Coverage of Communication Satellite in Cambodia," *2024 Jt. Int. Conf. Digit. Arts, Media Technol. with ECTI North. Sect. Conf. Electr. Electron. Comput. Telecommun. Eng. (ECTI DAMT NCON)*, pp. 163–168, 2024.
[42] K. Tsachrelias, C. A. Katsigiannis, V. Kokkinos, A. Gkamas, C. Bouras, and P. Pouyioutas, "Bandwidth Optimization Techniques in Heterogeneous 5G Networks Using DUDe," *Int. Conf. Adv. Commun. Technol. Netw.*, 2023.
[43] S. Bolla and M. Singh, "Comparison and Performance Analysis of Massive Mimo Based 5g Communication Network Through Potential Parameters," *Int. Conf. Comput. Commun. Netw. Technol.*, 2023.
[44] S. Sajid Ullah, V. Oleshchuk, and H. S. G. Pussewalage, "A survey on blockchain envisioned attribute based access control for internet of things: Overview, comparative analysis, and open research challenges," *Comput. Networks*, vol. 235, no. July, p. 109994, 2023.
[45] M. Awaludin, "Penerapan Algoritma Rc4 Pada Operasi Xor Untuk Keamanan Pesan Pada Smartphone Berbasis Web," *J. Sist. Inf. Univ. Suryadarma*, vol. 4, no. 1, pp. 16–22, 2018.
[46] A. Gehlot, R. Singh, L. R. Gupta, B. Singh, and M. Swain, "Introduction to Internet of Things," *Wirel. Internet Things*, pp. 3–11, Nov. 2019.
[47] A. M. Kachallah, A. Seck, T. Kondengar, I. Dioum, and S. Ouya, "Building an Hybrid Distance Learning Infrastructure for Higher Education: Combination of Internet and an Overlay VxLAN Network Controlled by Floodlight," *2024 IEEE World Eng. Educ. Conf.*, pp. 1–5, Mar. 2024.
[48] J. P. Choi, D. S. Jeon, and B. C. Kim, "Net Neutrality, Network Capacity, and Innovation at the Edges," *IO Product.*, vol. 66, no. 1, pp. 172–204, Mar. 2018.
[49] I. H. Sarker, "Multi-aspects AI-based modeling and adversarial learning for cybersecurity intelligence and robustness: A comprehensive overview," *Secur. Priv.*, vol. 6, no. 5, Sep. 2023.
[50] S. Krishnan and K. Jayavel, "Distributed Streaming Big Data Analytics for Internet of Things (IoT)," *Res. Anthol. Big Data Anal. Archit. Appl.*, pp. 303–338, Jan. 2022.
[51] S. Bardhan, M. Jenamani, and A. Routray, "Improving IoT Sensor Data Quality using Kalman Filter: The case of Cold Chain monitoring for Indian Mangoes," *2022 IEEE 7th Int. Conf. Converg. Technol.*, 2022.
[52] M. Schmitt, "Securing the digital world: Protecting smart infrastructures and digital industries with artificial intelligence (AI)-enabled malware and intrusion detection," *J. Ind. Inf. Integr.*, vol. 36, no. September, p. 100520, 2023.
[53] S. Waschull and C. Emmanouilidis, "Assessing human-centricity in AI enabled manufacturing systems: a socio-technical evaluation methodology," *IFAC-PapersOnLine*, vol. 56, no. 2, pp. 1791–1796, 2023.
[54] A. P. Brady *et al.*, "Developing, Purchasing, Implementing and Monitoring AI Tools in Radiology: Practical Considerations. A Multi-Society Statement From the ACR, CAR, ESR, RANZCR & RSNA," *Can. Assoc. Radiol. J.*, 2024.
[55] A. Anwar, Y. Zhang, Z. Zhang, and J. Li, "Artificial intelligence technology improves the accuracy of preoperative planning in primary total hip arthroplasty," *Asian J. Surg.*, no. xxxx, pp. 1–8, 2024.
[56] H. Shi *et al.*, "Organoid intelligence: Integration of organoid technology and artificial intelligence in the new era of in vitro models," *Med. Nov. Technol. Devices*, vol. 21, no. November 2023, p. 100276, 2024.
[57] H. Fan, "Research on innovation and application of 5G using artificial intelligence-based image and speech recognition technologies," *J. King Saud Univ. - Sci.*, vol. 35, no. 4, p. 102626, 2023.
[58] W. Zhu, R. Gui, and R. Guo, "Unveiling the nexus and promoting integration of diverse factors: Prospects of big data-driven artificial intelligence technology in achieving carbon neutrality in Chongming District," *Water-Energy Nexus*, vol. 6, pp. 112–121, 2023.
[59] W. Wei, "Automatic Design of Microcontroller System Simulation Based on Artificial Intelligence Technology and Data Intelligence Analysis," *Procedia Comput. Sci.*, vol. 228, pp. 966–973, 2023.
[60] M. Rauf, L. Kumar, S. A. Zulkifli, and A. Jamil, "Aspects of artificial intelligence in future electric vehicle technology for sustainable environmental impact," *Environ. Challenges*, vol. 14, no. January, p. 100854, 2024.
[61] S. A. M. Gilani and A. Faccia, "Broadband Connectivity, Government Policies, and Open Innovation: The Crucial IT Infrastructure Contribution in Scotland," *J. Open Innov. Technol. Mark. Complex.*, vol. 8, no. 1, p. 1, 2022.
[62] F. Trincado-Munoz, M. van Meeteren, T. H. Rubin, and T. Vorley, "Digital transformation in the world city networks' advanced producer services complex: A technology space analysis," *Geoforum*, no. June 2022, p. 103721, 2023.
[63] M. Farhan *et al.*, "Towards next generation Internet of Energy system: Framework and trends," *Energy AI*, vol. 14, no. October, p. 100306, 2023.
[64] M. Liyanage *et al.*, "A survey on Zero touch network and Service Management (ZSM) for 5G and beyond networks," *J. Netw. Comput. Appl.*, vol. 203, no. February, p. 103362, 2022.
[65] L. Gwaka, C. S. Yoo, and M. Haseki, "Internet Connectivity Among Indigenous and Tribal Communities in North America - A Focus on Social and Educational Outcomes," *SSRN Electron. J.*, Jan. 2021.
[66] M. Herrera, M. Sasidharan, H. P. Indiran, and A. K. Parlikad, "Bipartite networks to enable management of internet core and metro infrastructure," *IFAC-PapersOnLine*, vol. 56, no. 2, pp. 8580–8584, 2023.
[67] M. Pansera, J. Lloveras, and D. Durrant, "The infrastructural conditions of (de-)growth: The case of the internet," *Ecol. Econ.*, vol. 215, no. March 2023, p. 108001, 2024.
[68] J. Z. Huang, "A break in the cloud: the local sociotechnical affordances underlying global internet infrastructures," *Technol. Soc.*, vol. 74, no. April 2022, p. 102319, 2023.
[69] I. Ismail and M. Awaludin, "Penerapan Sistem Informasi Management Warehouse Dan Multi Outlet Berbasis Teknologi Hybrid Pada Cindy the

DOI : https://doi.org/10.25139/inform.v9i2.8109

Smilling Gift Shop Jakarta," *CKI SPOT*, vol. 10, no. 2, 2017.
[70] M. Awaludin, "Application Of Analytical Hierarchy Process Method For Employee Performance Evaluation At Pt Xyz," *JSI (Jurnal Sist. Informasi) Univ. Suryadarma*, vol. 7, no. 1, pp. 137–150, 2020.
[71] M. Awaludin and V. Yasin, "Application Of Oriented Fast And Rotated Brief (Orb) And Bruteforce Hamming In Library Opencv For Classification," *J. Inf. Syst. Applied, Manag. Accounting, Reserarch*, vol. 4, no. 3, pp. 51–59, 2020.
[72] H. Bulińska-Stangrecka and A. Bagieńska, "HR Practices for Supporting Interpersonal Trust and Its Consequences for Team Collaboration and Innovation," *Sustainability*, vol. 11, no. 16, Aug. 2019.
[73] N. Nawaz, H. Arunachalam, B. Kumari, and V. Gajenderan, "International Journal of Information The adoption of artificial intelligence in human resources management practices," *Int. J. Inf. Manag. Data Insights*, vol. 4, no. 1, p. 100208, 2024.
[74] S. Wang *et al.*, "The application of specialised management assistants in demand forecasting of human resources," *Heliyon*, vol. 8, no. 12, p. e11965, 2022.
[75] A. T. Kessy, "Decentralization and administrative discretion in Tanzania: An analysis of administrative discretion on human resources, finance and service delivery," *Soc. Sci. Humanit. Open*, vol. 8, no. 1, p. 100684, 2023.
[76] S. Delecraz, L. Eltarr, M. Becuwe, H. Bouxin, N. Boutin, and O. Oullier, "Responsible Artificial Intelligence in Human Resources Technology: An innovative inclusive and fair by design matching algorithm for job recruitment purposes," *J. Responsible Technol.*, vol. 11, no. August, p. 100041, 2022.
[77] F. Yiğit, "A three-stage fuzzy neutrosophic decision support system for human resources decisions in organizations," *Decis. Anal. J.*, vol. 7, no. January, p. 100259, 2023.
[78] O. Dudnik *et al.*, "Trends, impacts, and prospects for implementing artificial intelligence technologies in the energy industry: The implication of open innovation," *J. Open Innov. Technol. Mark. Complex.*, vol. 7, no. 2, p. 155, 2021.
[79] M. R. Karsayuda, M. Fadli, M. Khusaini, and A. Kusumaningrum, "Legal Construction of Infrastructure Financing Based on Public Private Partnership to Realize National Resilience," *Int. J. Humanit. Educ. Soc. Sci.*, vol. 3, no. 1, Aug. 2023.
[80] D. A. Contreras and L. A. Anderson, "Approach to Establishing an Infrastructure for Delivering Third-Party-Reimbursable Community-Based Health Education," *J. Ext.*, vol. 58, no. 3, pp. 1–6, Jun. 2020.
[81] H. Raviadaran, O. Dastane, M. Y. Ma'arif, and N. S. M. Satar, "Impact of Service Quality Dimensions on Internet Banking Adoption, Satisfaction and Patronage," *Monet. Econ. Financ. Syst. Institutions eJournal*, 2019.
[82] Y. Lin, "Enabling and Improving Centralized Control in Network and Cyber-Physical Systems: An Application-Driven Approach," *Univ. Michigan Libr.*, 2020.
[83] Q. Zhao, X. Tian, Y. Li, K. D. Pham, J. C. Lyke, and G. Chen, "Intelligent dynamic network traffic management for global network access terminal," *38th Int. Commun. Satell. Syst. Conf. (ICSSC 2021)*, vol. 2021, no. 14, pp. 45–53, 2021.

DOI : https://doi.org/10.25139/inform.v9i2.8109