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COMBINING THE MAGIC OF *ARTIFICIAL INTELLIGENCE* (AI) IN CULTURAL WISDOM

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ABSTRACT

In the modern era dominated by technological advancements, artificial intelligence (AI) has become an extraordinary phenomenon. The effort to utilize technological advances to preserve, develop, and honor cultural heritage is known as combining the magic of artificial intelligence with cultural wisdom. The purpose of this study is to find out how artificial intelligence (AI), with its unique capabilities and technology, is an effective tool to maintain, promote, and enrich cultural wisdom. The case study methodology, combined with the qualitative approach, is used in this study. The conclusion of this study suggests using a case study methodology combined with an iterative process. The results show that

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through advanced technology, artificial intelligence (AI) helps maintain language, literature, art, music, and the natural environment with cultural value.

INTRODUCTION

Culture encompasses complex aspects, including knowledge, beliefs, art, morals, customary laws, and other skills, along with the habits of members of society. (Prayogi & Danial, 2016) culture does not occur by chance or without meaning; Rather, culture is shaped by values set by society in a particular social context.

Cultural values reflect local identity and unite communities. Cultural forces, which are often invisible, can influence individual behavior and attitudes according to the norms and ideas that society embraces in various fields, such as economics, society, politics, and the arts. (Normina, 2017)

In the modern era dominated by technological advancements, artificial intelligence (AI) has become an extraordinary phenomenon. The development of AI has great potential to change our lifestyles and daily activities, as revealed by (Pabubung, 2021). This not only has an impact on life and work but also has great potential in advancing and preserving cultural wisdom.

Cultural wisdom includes the history, values, language, art, and traditions of a society, which are priceless treasures. However, the impact of globalization and rapid

technology often threatens the continuity and preservation of cultural wisdom, even to the risk of extinction or oblivion.

In recent decades, Artificial *Intelligence* (AI) applications have come a long way. Some of the early applications of AI include the creation of recommendations for expert systems and knowledge-based systems.

Artificial Intelligence (AI) is described as a "general concept" that refers to the simulation of human thought processes and intelligence by machines connected to large amounts of data and information. AI is designed with an approach similar to human intelligence and capabilities. (Pabubung, 2021)

AI technology can be used to describe, record, and recreate art and historical artifacts with a very high level of detail so that cultural heritage can be preserved in digital form for future generations to access and study.

Through cultural heritage, people who live today can see cultural developments from time to time and become a source of history that can indirectly convey the reality of the past because it can provide information about human life in the past.

This article discusses how *artificial intelligence* (AI), with its unique capabilities and technology, is an effective tool for curating, promoting, and enriching cultural wisdom. From the preservation of language and literature to the restoration of the arts, *artificial intelligence* (AI) is paving the way for extraordinary innovation in our efforts to preserve and understand cultural values.

CONCEPTUAL FRAMEWORK

Artificial Intelligence

Artificial intelligence technology or *Artificial Intelligence* is one of the fastest advances in science and technology in the world. Due to its broad scope, this technology can be used in a variety of fields.

(Luckin, R., Holmes, W., Grifths, M. & Forcier, 2016) Argues that artificial intelligence (*artificial intelligence*) is a computer system that can interact with the world through the same intelligent behavior as humans in general.

Colen (1997) asserts that artificial intelligence is a fundamental theory of intelligence mechanisms and empirical methods for creating and testing models that may support the theory. *Artificial intelligence* is a technique that allows computers to perform different types of learning, such as those performed by humans and animals (Millington, I., & Funge, 2009).

(Rusel, S. J. & Norvig, 2010) Grouping the definition of AI into four categories. The first category, " *thinking humanly,*" states that AI reflects the way people think in everyday things, such as solving problems, making decisions, and other actions. The second category, "*acting humanly*," says that AI is a machine that can function similarly to humans and can do things in a similar way to humans. The third category is "*thinking rationally*," which means that AI is able to combine mental abilities through model computing, and the fourth category is "*acting rationally*," which means that AI is designed to create intelligent agents by creating sophisticated systems.

According to (Rusel, S. J. & Norvig, 2010), There are several foundations in the creation of *artificial intelligence,* namely philosophy, mathematics, economics, neuroscience, psychology, computer engineering, control theory and security problems, and linguistics.

AI is beneficial to humans if used properly. Haugeland (1996) said that artificial intelligence is a brain design, which means that it creates a system that has a similar way of working to the human brain.

Local Cultural Wisdom

Wisdom means having wisdom and intelligence when interacting. "Local" is a word that means a place or a place where something lives or is different or valuable from another place (Muin Fahmal, 2006).

Saini highlighted the research of Permana et al. (Permana. One. Cecep, 2010), which states that local communities are often associated with local wisdom. Local wisdom is considered the brilliance of the original language, expertise, or wisdom. Local wisdom is what gives resilience and strength that continues to grow in the community where they are located. Local wisdom is the attitude, view, and capacity to manage its

physical and spiritual environment. In other words, local wisdom is a response to certain geographical, political, historical, and contextual circumstances.

In addition, local wisdom can be understood as a different way of looking at life, knowledge, and life strategies in the form of actions taken by local communities to overcome various problems and meet their needs. These activities can cover all aspects of life: religion, science and technology, social organization, language and communication, and the arts. They understand the policies, plans, and strategies related to maintaining, improving, and creating needs, as well as how to meet them by considering the available natural resources and human resources. (3, 2020).

The community views local wisdom as something precious and beneficial for their lives. The need to live, preserve, and sustain life in accordance with the circumstances, abilities, and values of the society concerned leads to the development of the system. In other words, their sensible way of life incorporates local wisdom to help them solve all their difficulties. They are able to continue living and grow sustainably because of local wisdom (Permana. One. Cecep, 2010)

Local wisdom is one of the cultural heritages that are part of traditional culture. Local wisdom develops into community goals and appreciation in the cognitive, emotional, and motor realms. According to Geriya (Permana. One. Cecep, 2010), Local wisdom is focused on:

1. Harmony and balance between nature, culture, and humans.
2. Preservation of cultural and natural diversity.
3. Concerts for the environment and cultural heritage.
4. Conservation of resources of economic value.
5. Spirituality and morality.

Cultural Diversity

Cultural diversity refers to social and religious structures. which includes knowledge, beliefs, arts, and customs passed down from generation to generation. The benefit of this cultural diversity is the presence of cultural aculturation, but does not

remove the characteristics of each country, which makes cultural diversities richer (Made Antara; Made Vairagya Yogantari, 2018).

The identity of a country is its cultural diversity. Cultural diversity has many advantages, including:

1. National identity.
2. National unification tools.
3. Tourist attractions.
4. Increasing national income.
5. Cultivating tolerance.
6. Source of science (Made Antara; Made Vairagya Yogantari, 2018).

METHODOLOGY

To highlight Meleong's research (Lexy J. Moleong, 2006), Bogdan and Taylor combined the case study research method with a qualitative approach as part of their methodology. Research that aims to understand the phenomena experienced by the subject is known as qualitative research. This type of research can relate to behavior, perception, motivation, action, or other related topics and can be described in a natural and specific context using scientifically accepted methods.

(John W. Edition, 2009) thinks that qualitative research is a research process and understanding based on a methodology that can be used to investigate social phenomena and human problems.

According to (Action, 2006), To methodically explore, characterize, and explain the different characteristics of a person, group, program, organization, or event, case study techniques utilize a variety of data sources.

This present study also uses the exploratory case study method. (Yin & Robert, 2011) explains that a case study can be used to explore situations where the intervention which would be evaluated does not have a single and clear outcome structure. The primary data are collected from the unstructured interviews and document analyses, and the secondary data are gathered from observations and literature reviews (Januarti, & Wempi, 2019).

The social sciences are the original field of inquiry behind case studies. When learning how or why something works, case studies tend to work better. When the researcher cannot control the event being studied and when the phenomenon being studied is a social event that is happening at this time (Yin & Robert, 2011).

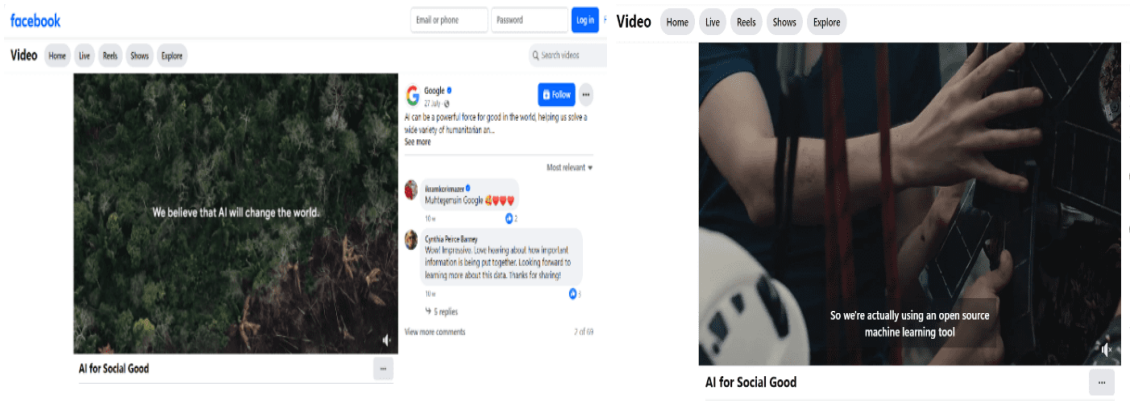
This study uses *a holistic single case* study method with the research object of discussing *artificial intelligence* (AI) in a cultural context. This research wants to see and find out how *artificial intelligence* (AI), with its unique capabilities and technology, is an effective tool for maintaining, promoting, and enriching cultural wisdom.

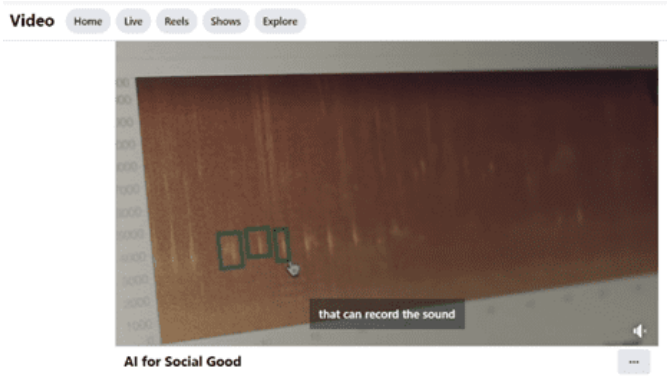
FINDINGS & DISCUSSION

Language and Literature Maintenance

Language and literature are essential aspects of cultural wisdom. *Artificial intelligence* has aided in the maintenance and recovery of endangered languages. A real example is the "*Google AI for Social Good*" project, which uses AI technology to record and understand endangered minority languages. AI can also be used to translate classic literary texts into multiple languages, allowing more people to access and understand the global literary heritage.

Figure 1. Display of "Google AI for Social Good"





Source: (Google, 2023)

Sound Engineering and Traditional Music

Artificial Intelligence has become a handy tool in engineering and reproducing traditional music. Through massive analysis of traditional music from different cultures, AI can create new compositions inspired by the world's musical heritage. This helps maintain and develop traditional music that may be endangered.

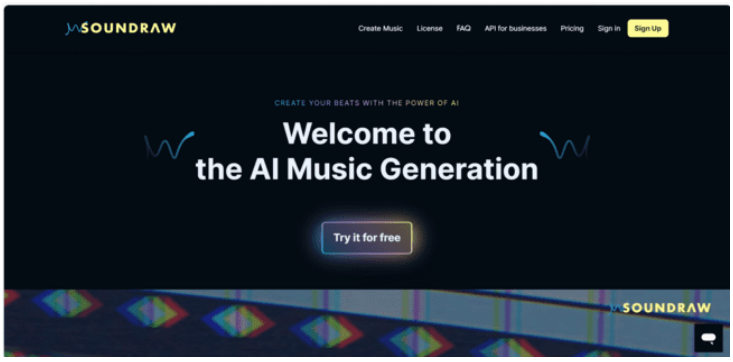
The application of Artificial Intelligence (AI) in music production has grown significantly. However, some might contend that utilizing AI technology is used for music production. (Deruty, Grachten, Lattner, Nistal, & Aouameur, 2022)

Various AI music production services have emerged in recent years, with different areas of focus. These services are often offered on specialized platforms that provide integration with artists' work, but understanding, installing, running, and using AI musical instruments independently is not easy, as it requires technical expertise and familiarity with the basic ideas of machine learning. Some interesting AI tools for creating music compositions include *Soundfull, AIVA, Ecrett Music, Soundraw, Boomy, Musico, and Beatoven.ai*,

Figure 2. Sound full AI Display

Source: (Soundful, 2023)

Figure 3. Sound raw AI Display



Source: (Soundraw, 2023)

Conservation of Arts and Culture

Conservation of art objects and cultural heritage is one of the ways *in which artificial intelligence* makes a significant contribution. By using 3D scanning and image processing technology, AI can aid in the maintenance and restoration of historical art and artifacts. With its ability to reproduce excellent details, AI helps in preserving the beauty of art from the past.

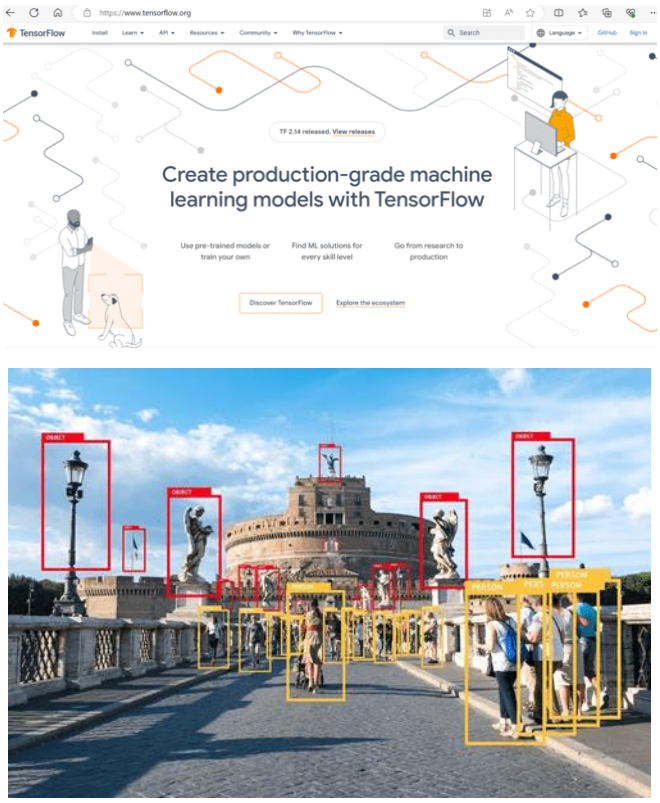
Artificial intelligence (AI) has the potential to contribute to preserving cultural heritage, one of which is cultural heritage more effectively and efficiently. Cultural heritage has the effect of clarifying the identity of a nation because it is manifested in the form of unique and standard cultural products of the nation. (Bahri et al., 2019)

Cultural heritage is defined as "any object of building, structure, time, or location that has important value for history, religion, science, and culture for the life of society, nation, and state" in Law Number 11 of 2010 concerning Cultural Heritage of the Republic of Indonesia. (Law of the Republic of Indonesia Number 11 of 2010 concerning Cultural Heritage, 2010)

Artificial intelligence (AI) technology, such as data analysis and machine learning, can be used to identify cultural heritage objects, analyze the condition of cultural heritage, and predict the future of cultural heritage.

Artificial intelligence tools can be used, such as Tensorflow, to identify cultural heritage objects such as historical buildings, archaeological sites, or statues.

Figure 4. View of objects detected by "Tensorflow"



Source: (Abadi et al., 2015)

Another tool used is *Building Information Modeling* (BIM), a platform used to produce three-dimensional representations of a historic building or object. Through BIM,

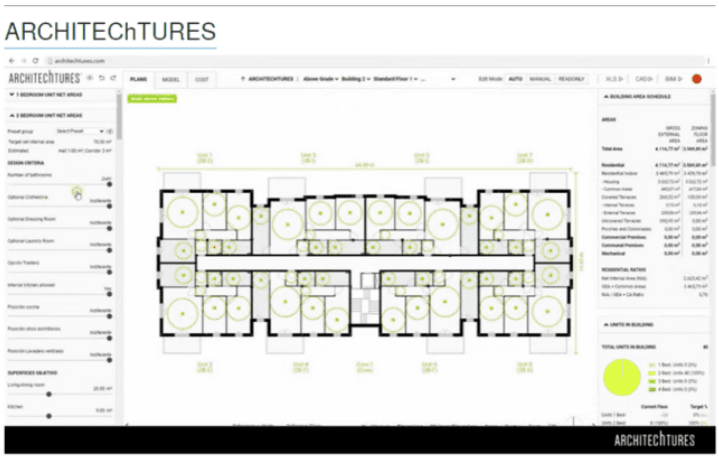
users can evaluate the state of historic buildings or objects, as well as conduct simulations to plan maintenance or repairs. The BIM model includes all the physical components of the actual building as well as the components used in the construction of the building.

A novel method is emerging in building design, engineering, and construction known as building information modeling (BIM). It opens the door to creating digital representations of buildings that may be associated with real-world data, such as numbers, words, photographs, and more (Pocobelli, Boehm, Bryan, Still, & Grau-Bové, 2018).

Construction robots have toiled in labs for decades, ideas for AI design and code-checking tools have been around since the mid-1980s, and Building Information Modelling (BIM) is rooted in a seminal 1975 study (Sacks, Girolami, & Brilakis, 2020)

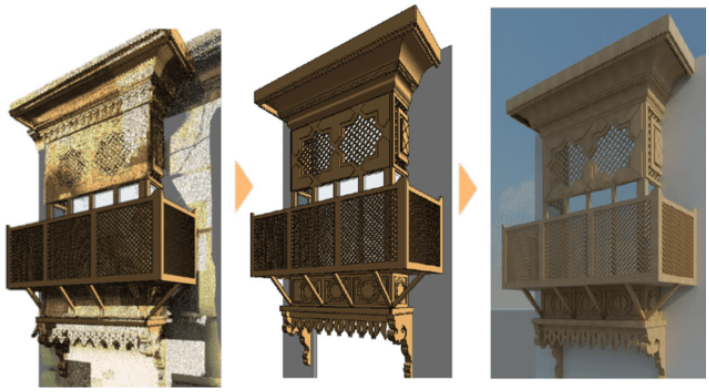
One such integrating technology is Building Information Modelling (BIM), which gives projects an information backbone that goes across organizational boundaries. (Sacks, Bloch, Katz, & Yosef, 2019)

Figure 5. View of BIM tools "ARCHITEChTURES"



Source: (Smartscapes Studio, 2023)

Figure 6. AI *Building Information Modelling* (BIM) Display



Source: (Baik A, Alitany A, Boehm J, 2014)

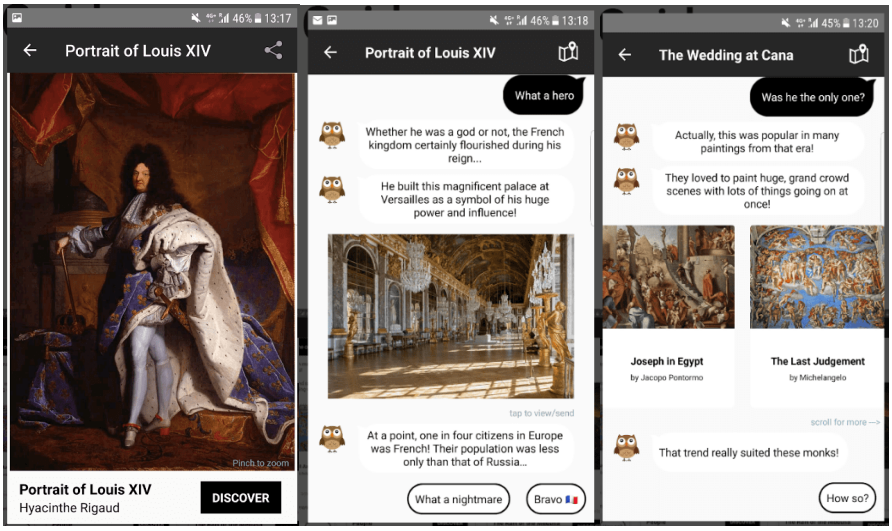
Promotion of Tourism and Cultural Tourism

Artificial Intelligence (AI) also helps in the promotion of cultural tourism. With massive data analysis, AI can provide travelers with better recommendations on places that best suit their interests, including historical sites, cultural festivals, and regional culinary specialties. It helps in supporting the local economy and preserving cultural heritage.

With the help of AI, we can analyze data on tourist behavior, spot trends, and forecast demand. Promotional initiatives and tourist development can benefit from this data (Zancan, Passador, & Passador, 2023)

The use of artificial intelligence in the travel sector can improve the quality of the travel experience through increased personalization, the provision of real-time information, and more efficient services and interactions with tourists. Several global tourist destinations have adopted *artificial intelligence* (AI) technology to enhance the tourism experience, including tools used in tourism destinations in Paris, France. (Louvre's Chatbot): The Louvre Museum in Paris has an *artificial intelligence chatbot* that assists visitors in exploring the museum's art and culture collections.

Figure 7. Louvre's AI Chatbot Display



Source: (Emoji Guide, 2023)

The use of *artificial intelligence* in local culture, namely the *Artificial Imagination* exhibition in Yogyakarta by the Wayang Merdeka Community, this performance is an effort to reflect on the heritage of our ancestors' perceptual, tactile, and storytelling abilities, which they inherited from us through art and philosophy.

Figure 8. Wayang Merdeka Artificial Imagination exhibition event

Source: (Wayang Merdeka, 2023)

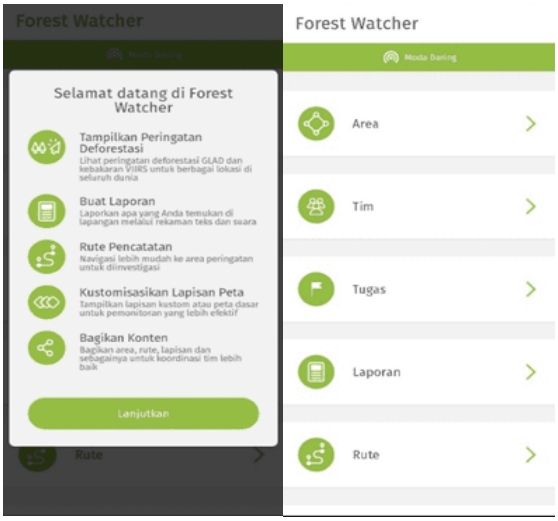
Natural Heritage Preservation

Cultural heritage is not limited to the human aspect alone; it also includes the natural environment that is important for the culture of a region. *Artificial intelligence* can be used to monitor and maintain natural environments such as rainforests, mountains, and deserts that have cultural significance. With satellite data analysis and pattern recognition, AI can help in preserving this nature.

The use of AI has several potential benefits for the revitalization of historic sites, such as the ability to make decisions based on data, improve visualization and simulation, and manage infrastructure more intelligently (Soliman;, 2023)

Google, the World Resources Institute (WRI), and Global Forest Watch (GFW) are collaborating on the Forest Watcher project to use artificial intelligence (AI) for the benefit of nature conservation. By analyzing satellite data, this study can detect forest changes in real time using AI. Governments, environmental groups, and forest rangers can respond quickly to forest fires, land encroachment, and deforestation because of this.

Figure 9. "Forest Watcher" tool display



Source: (World Resources Institute, 2023)

Cultural Education

Artificial intelligence (AI) also plays a vital role in cultural education. With various AI-based learning platforms, we can access information about cultural values and wisdom from around the world. It helps in broadening our horizons about different cultures and encourages appreciation for the cultural diversity that exists in this world.

Education is a process or effort to improve the existence of an individual or society from its initial state to a better state. This process involves studying, discussing, or reflecting on educational issues or actions. (Neolaka, A., & Australia, 2017)

Local cultural values are of great significance because they reflect a set of beliefs that influence the attitudes and behaviors of individuals or groups in the context of social life. In Indonesia, people use cultural values as a foundation to interpret and respond to the impact of globalization. (Hindaryatiningsih, 2016)

CONCLUSION

In conclusion, this study delves deep into the dynamic interplay between tourism and communication, specifically focusing on the influence of digital advancements and AI integration within a qualitative methodological framework. The research has

unveiled essential insights into the changing landscape of tourism communication and its profound implications. The findings underscore that AI-driven chatbots have emerged as potent tools that significantly enhance traveler engagement. The immediacy of assistance and the provision of personalized recommendations have the potential to transform the way travelers interact with tourism providers. As such, the importance of AI in delivering interactive and satisfying travel experiences cannot be overstated.

Predictive analytics has emerged as a powerful force, driving personalization within the tourism industry. By harnessing data on traveler behaviors and preferences, tourism providers can craft highly tailored marketing strategies and travel packages. This data-driven approach not only heightens traveler satisfaction but also leads to increased conversion rates. In essence, personalization is rapidly becoming a linchpin of success in the tourism sector. Language translation tools, a facet of digital advancement, play a pivotal role in breaking down language barriers and facilitating cross-cultural communication. The inclusivity achieved through these tools broadens the tourism industry's global reach and enables it to cater to a more diverse array of tourists. However, it is essential to acknowledge the challenges that accompany AI integration. Privacy concerns, potential biases in AI algorithms, and the necessity for ongoing updates and maintenance demand attention. These challenges highlight the necessity for a responsible and ethical approach to implementing AI within the tourism industry.

Nevertheless, the research has reaffirmed that the transformative potential of AI and digital advancements is reshaping the future of tourism communication. These technologies are not just enhancing efficiency; they are redefining how tourism providers engage with travelers and how travelers experience destinations. The impact of AI and digital advancements extends beyond the present, offering substantial benefits and opportunities for all parties involved in the hospitality

sector. As the hospitality industry evolves in the digital age, it is imperative that stakeholders understand and navigate the intricate dynamics of AI integration in communication strategies. In doing so, they will harness the full potential of AI to create more interactive, engaging, and personalized travel experiences, ultimately contributing to the industry's growth and sustainability.

In summary, this research underscores that the fusion of digital advancements and AI integration is revolutionizing tourism communication and, by extension, the entire tourism industry. These transformations offer substantial benefits, but they also demand thoughtful consideration and responsible management to unlock their full potential. The future of tourism communication is being shaped by AI, and stakeholders must be prepared to embrace this transformative force.

LIMITATION AND STUDY FORWARD

Combining the magic of *artificial intelligence* with cultural wisdom is a promising endeavor, but there are some challenges and limitations that need to be considered. Some limitations or gaps often occur during this process. Although they are very sophisticated today, it is often difficult to understand the complex local cultural context.

Cultural wisdom is often contextual, with different meanings and interpretations depending on the context, place, and cultural history. If *artificial intelligence* is incorporated into cultural aspects, it can cause communities to oppose it because it considers the technology threatening or ignores traditional values. In addition, privacy, cultural property rights, and unethical commercial exploitation will be a concern.

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