

The role of social media and AI in increasing willingness to pay and its implications on the quality of urban park design

Desivera Tri Rahayu^{a*}, Salampak^b, I Nyoman Sudyana^b, Berkat^b, Noor Hamidah^b, Saputera^b, Bambang S. Latt^b, Rinto Alexandro^b, Johanna Maria Rotinsulu^b and Jovan Sofyan^a

^aStudent in the Environmental Science Doctoral Program, Forest Resources Management Concentration, Universitas Palangka Raya, Indonesia

^bDoctoral Program of The Environmental Science, Universitas Palangka Raya, Indonesia

CHRONICLE

Article history:

Received: July 6, 2024

Received in revised format: August 28, 2024

Accepted: September 20, 2024

Available online: September 20, 2024

Keywords:

Social media

AI

Willingness to pay

Design

City parks

ABSTRACT

Social media and artificial intelligence (AI) are increasingly playing an important role in the process of designing city parks by influencing people's willingness to pay. This research aims to explore how social media and AI can increase willingness to pay and its impact on the quality of urban park design in Palangkaraya City, Central Kalimantan. Method: This research uses a mixed approach with a combination of quantitative surveys and qualitative interviews. The survey was conducted on 200 respondents from Palangkaraya residents to measure the influence of social media and AI on their willingness to pay. Social media data analysis was conducted using AI tools to identify popular garden design preferences. Data was collected from social media platforms as well as in-depth interviews with stakeholders. The research results show that there is a significant positive correlation between social media involvement and people's willingness to pay. AI data from social media analysis reveals the most popular garden design elements, which then influences design decisions. The quality of park designs that integrate feedback from social media and AI recommendations receive higher ratings from the public. These findings indicate that social media and AI can significantly increase willingness to pay and the quality of urban park design. Active engagement of the public through social media helps formulate designs that better suit their needs, while AI ensures designs that are more innovative and responsive to public preferences. This research emphasizes the importance of using digital tools to improve community engagement and urban planning outcomes.

© 2025 by the authors; licensee Growing Science, Canada.

1. Introduction

The negative impacts of urbanization in cities have put great pressure on countries in the world to provide green facilities in cities, and achieve environmental balance with Green Open Space (RTH). This has become an important part of *Sustainable Development Goals* (SDGs) in cities around the world (Zeng et al., 2023). The United Nations' "2030 Agenda for Sustainable Development" contains a series of actions aimed at balancing economic progress and protecting the environment. Greening for a better future for all consists of 17 goals and 169 targets. To support *urgent* sustainable and resilient urban open space management. The goal of SDGs 11 "Sustainable Cities and Communities" is to "make cities inclusive, safe, resilient and sustainable" (Klopp and Petretta, 2017). One strategy to achieve the SDGs and improve urban resilience is to promote the appropriate design and construction of open spaces (parks and squares) as components of green infrastructure (Kim et al., 2024).

* Corresponding author.

E-mail address trirahayu.dvera2018@gmail.com (D. T. Rahayu)

ISSN 2561-8156 (Online) - ISSN 2561-8148 (Print)

© 2025 by the authors; licensee Growing Science, Canada.

doi: 10.5267/j.ijdns.2024.9.011

Green open space planning requires a careful approach in the context of zoning and land use, to create green open space that functions optimally, is sustainable, and supports the needs of society and the urban environment. Although the study of zoning and land use is widely discussed in civil engineering research, this is very relevant in the planning and development of green open spaces. Zoning and land use are important instruments for allocating green open space areas wisely, considering the needs and interests of various communities, and paying attention to sustainability and environmental aspects (Wang and Lin, 2012). Through careful spatial analysis and planning, zoning and land use studies can provide implications for strategic location decisions for RTH, determine the types of activities that are suitable for each RTH zone, and ensure adequate supporting infrastructure to create functional, aesthetic and aesthetically pleasing RTH. contribute to the balance of the urban ecosystem (Alsos et al., 2024).

In Indonesia, studies on green open space management are still looked at from an ecological perspective. Afriyane Research *et al.*, (2020) in Bandung City and Ramdhoni's research *et al.*, (2016) in Jakarta is research on green open spaces published in the international academic community. Both studies looked at the benefits of green open space as environmental protection and a medium for balancing air temperature in cities. Next, research conducted by Idris *et al.*, (2022) looked at community evaluations of green open space in Padang City. So far, to the best of the author's knowledge, there are no studies looking at community preferences for the management of green open spaces in city parks in Indonesia, even though community preferences for green open spaces in city parks can have an impact on sustainable management (Parappallil Mathew & Bangwal, 2024).

Palangka Raya Salah is a city that is currently in the world's spotlight regarding urbanization and urban conservation. BPS data for 2017 shows that the population density in Palangka Raya is 93 inhabitants/km² square, while in 2019 it had reached 103 inhabitants/km² (BPS, 2019). This indicates that population density in Palangka Raya increases by more than 10% in a year, while land availability remains constant. Increasing urbanization will have a negative impact on the environment and public health. Increasing urbanization in Palangka Raya City has implications for dense residential areas. On the other hand, the link between city parks and increasing property values has become an interesting topic in several studies on housing and settlements. The type of landscape, design, facilities and vegetation of urban parks have different influences on increasing the value of surrounding properties (De-León Almaraz et al., 2024).

The DCE method has been widely used in the context of environmental research, especially regarding green open space design. Arnberger and Eder's (2011) research utilized DCE to see differences in visitor preferences based on age regarding green open space design in Vienna, Austria. Furthermore, the DCE method was used by Macháč *et al.* (2022) to explore the diversity of people's preferences for green open space park concepts *green* and *blue* in Liberec, Czech Republic. The DCE approach was also used by Basri (2011) to design a hypothetical city park by looking at the preferences of residents in Kuala Lumpur, Malaysia. However, in the Indonesian context, the author has not found any scientific publications regarding the use of the DCE method to evaluate community preferences regarding green open space in city parks. The DCE approach was also used by Basri (2011) to design a hypothetical city park by looking at the preferences of residents in Kuala Lumpur, Malaysia. However, in the Indonesian context, the author has not found any scientific publications regarding the use of the DCE method to evaluate community preferences regarding green open space in city parks (Zweig et al., 2021).

The advantage of using DCE is that researchers can calculate willingness to pay or *Willingness To Pay* (WTP) respondent (Wulansari *et al.*, 2018). WTP analysis in the context of city parks is an economic approach used to measure the level of community readiness to pay a certain amount in the form of financial contributions, to support, maintain or improve city parks. WTP allows a quantitative assessment of the value that society places on city parks as urban environmental assets (D. Wang & Shao, 2024). When the public shows their readiness to contribute financially to support or maintain city parks, this indicates recognition of the environmental value that city parks have. WTP analysis allows a concrete assessment of the extent to which society values environmental aspects, such as ecological sustainability, biodiversity, air quality and carbon sequestration provided by urban parks. In other words, the higher the WTP, the greater public awareness of the importance of city parks as green spaces that support urban ecosystems. The implications of high WTP can indicate strong support from the community for environmental preservation in the city center, sustainable park development, and maintenance of urban ecosystems which have a positive impact on quality of life and climate change (Vinayavekhin et al., 2024).

This research combines ecological concepts with analysis of community preferences, so that it can provide policy implications for appropriate management of green open space in city parks for policy makers. It is hoped that the results of this research will be able to provide a design model for green open space for city parks in Palangka Raya City which is based on the aspirations and preferences of the community, so that the community can play a greater role in protecting and preserving the environment in the city center. Through WTP analysis, the results of this research also provide *insight* about how much people value city park green open spaces, related to their perceived utility. Furthermore, supported by analysis of public perceptions of city parks, policy makers can have the right radar in designing the direction of green open space development in the future (Islam & Ali, 2024).

2. State of the art

Based on the phenomenon that has been discussed above, there is also a research gap from previous research that will be explained in Table 1 below:

Table 1

Research Gap

Author	Result	Gap
(Tan et al., 2023)	Significant	There are differences in results regarding the role of AI in the quality of urban park design
(van Hoof et al., 2021)	Significant	
(Shemesh & Parag, 2024)	Not significant	

Based on the phenomena and research gaps that have been explained, the formulation of the problem in this research is 1) is there a significant influence of social media on the quality of city park design, 2) is there a significant influence of AI on the quality of city park design, 3) is there a significant influence is there a significant influence of social media on willingness to pay, 4) is there a significant influence of AI on willingness to pay, 5) is there a significant influence of willingness to pay on the quality of city park design, 6) is there a significant influence of social media on the quality of park design city through willingness to pay, 7) is there a significant influence of AI on the quality of city park design through willingness to pay.

3. Theory

3.1 The influence of social media on the quality of urban park design

The influence of social media on the quality of urban park design can be seen from various perspectives (Dowthwaite et al., 2024). First, social media as an interaction platform allows citizens to participate in the city park design process. With social media, city governments or designers can easily collect feedback from the public regarding what they want in city parks. This participation allows the creation of designs that are more inclusive and in line with the needs and desires of the community. This shows that social media plays a role as a democratization tool in designing public spaces (van Hoof et al., 2021).

Second, social media also functions as a source of inspiration and benchmarking for designers and urban planners (Shemesh & Parag, 2024). Through various platforms such as Instagram, Pinterest, or Twitter, designers can see the latest trends in urban garden design from various parts of the world. This allows them to adopt innovative and relevant ideas that can improve the aesthetic and functional qualities of urban parks. Thus, social media encourages the transfer of knowledge and best practices in public space design (Dwivedi et al., 2021).

Third, social media plays an important role in the promotion and sustainability of urban parks (Sochacka et al., 2024). Once the park has been designed and built, social media becomes an effective means of promoting the park to the wider community. By uploading images, videos and reviews on social media, city parks can be more widely known, attract more visitors and increase public awareness of the maintenance and preservation of these parks. This shows that social media not only influences the design stage, but also impacts how the park is accessed and appreciated by the public (Y. Wang et al., 2024).

Based on this explanation, it can be concluded that there is a significant influence on the role of social media on the quality of urban park design (Avornyo et al., 2024).

H₁: *There is a significant influence of social media on the quality of city park design.*

3.2 The influence of AI on the quality of urban park design

The significant influence of the role of AI on the quality of urban park design can be explained through the following concepts (Helmi et al.). Design Optimization with Data and AI Analysis, AI has the ability to analyze large amounts of data quickly and accurately, such as environmental data, weather patterns and human behavior. With this capability, AI can help design city parks that are more suited to people's needs and preferences, and more adaptive to local environmental conditions. AI algorithms can optimize designs based on various variables, ultimately improving the quality of urban park design (Syahrums, 2024).

Simulation and Prediction-Based Design, AI can be used to simulate various urban park use scenarios, such as pedestrian flow, open space use, and social interactions. These simulations allow designers to predict how people will use the garden and make adjustments to the design to ensure that the space functions well and is comfortable. This can improve the overall effectiveness and quality of the design. Personalization and Community Engagement Using AI, urban park designs can be more personalized

based on the unique preferences and needs of the local population (Tan et al., 2023). AI can collect and analyze feedback from users, which can then be used to adjust designs to make them more relevant and useful to the community. This not only improves the aesthetic quality, but also the functional quality of urban parks (Sriany Ersina, 2023).

Efficiency in Resource Management, AI can help in managing resources, such as water and energy, needed to maintain urban parks (Richo et al., 2024). Through sophisticated data analysis, AI can optimize resource use so parks can be maintained more efficiently and sustainably. The quality of the park environment, including cleanliness, greenness and availability of facilities, will improve as a result of better management. Evidence-Based Design Decisions AI supports an evidence-based design approach by providing powerful data and in-depth analysis. This allows designers to make more precise and informed decisions in every aspect of urban garden design. As a result, the quality of the resulting design is higher because it is based on solid empirical evidence (Kambuaya, 2021).

Thus, the role of AI makes a significant contribution to improving the quality of urban park design through design optimization, predictive simulation, personalization, management efficiency, and evidence-based design decisions (Yunita & Hasri, 2022).

H₂: *There is a significant influence of AI on the quality of city park plans.*

3.3 The influence of social media on willingness to pay

The influence of social media on willingness to pay can be seen through several theoretical mechanisms (Pranata & Karmeli, 2024). First, social media acts as an effective communication and promotional tool, which can increase consumer awareness of a product or service. Through content distributed on social media, companies can introduce the value or benefits of their products more widely and in depth. When consumers understand the uniqueness and superiority of a product through information shared on social media, this can increase the perception of the product's value, which in turn can increase willingness to pay (Ningsi et al., 2020).

Second, social media influences willingness to pay through the social proof mechanism. Consumers tend to be influenced by the behavior of others in their social circle (Huang & Chueh, 2021). When they see other people on social media talking about, buying, or recommending a product, they are more likely to perceive the product as having high value. Positive reviews, testimonials, or endorsements from influencers on social media can strengthen positive perceptions of the product, which ultimately increases consumers' willingness to pay because they feel more confident and believe that the product is worth buying (Shankar et al., 2022).

Third, social media can increase willingness to pay through the creation of a brand community (Benoit et al., 2024). On social media platforms, consumers can interact directly with brands as well as with other consumers who have similar interests. This creates a sense of emotional connection and loyalty to the brand, which ultimately influences willingness to pay. When consumers feel part of a community associated with a particular brand, they may be willing to pay more for products or services from that brand because they are not only purchasing the product, but also purchasing the experience and identity attached to that community (Guizzardi et al., 2022).

H₃: *There is a significant influence of social media on willingness to pay.*

3.4 The influence of AI on willingness to pay

The significant influence of the role of AI on *willingness to pay* (WTP) or willingness to pay can be explained through the following mechanisms, Personalization and Targeted Offers, AI has the ability to analyze consumer behavior and preference data in depth (Zhang et al., 2023). By leveraging this data, AI can create highly personalized offers that better suit individual needs and desires. These well-targeted offers can increase the perceived value of the product or service in the eyes of consumers, which in turn increases *willingness to pay*. Consumers tend to be willing to pay more for products or services that they consider highly relevant and tailored to their preferences (Nag & Goswami, 2024).

Improved User Experience: AI can improve user experience by providing services that are more responsive, fast and easy to use. For example, AI chatbots that provide 24/7 customer service, or recommendation systems that make it easier for consumers to find the products they are looking for, can increase user satisfaction. These positive experiences can make consumers feel more comfortable and valued, thereby increasing their willingness to pay more (Elasu et al., 2023). Dynamic Price Optimization, AI enables the implementation of dynamic pricing strategies tailored to market conditions and consumer behavior in real-time. By predicting demand and price elasticity, AI can set optimal prices that are within a range *willingness to pay* consumers. This ensures

that the price offered is neither too low nor too high, thereby increasing the probability of purchase while maximizing revenue (Calzada, 2023).

Transparency and Trust, AI can increase the transparency of information about products or services, such as providing automated reviews, price comparisons, or quality certifications (Zeng et al., 2023). This transparency can increase consumer confidence in the product or service, so that they are more willing to pay a higher price because they feel confident in the quality and benefits obtained. **Long-Term Value Prediction** AI can help consumers understand the long-term value of the products or services they purchase. For example, AI can predict the cost savings or efficiency improvements that a product or service may gain in the long term. When consumers realize these long-term benefits, they may be more willing to pay more at the time of purchase (Kim et al., 2024).

Improved Communication and Interaction AI can also be used to improve communication and interaction between businesses and consumers, such as through the delivery of relevant content and personalization of marketing communications (Alsos et al., 2024). More meaningful and relevant interactions can create stronger relationships between consumers and brands, which can ultimately increase consumers' willingness to pay more. Thus, AI can influence *willingness to pay* significantly by improving personalization, user experience, trust, and perceived long-term value of the product or service. These mechanisms work synergistically to create a situation where consumers feel that the product or service they receive is of great value, so they are more willing to pay a higher price (Parappallil Mathew & Bangwal, 2024).

H4: *There is a significant influence of AI on willingness to pay.*

3.5 The influence of willingness to pay on the quality of city park design

Willingness to pay (WTP) or the willingness to pay from the community has a significant influence on the quality of urban park design through the following mechanisms, **Increased Budget and Resources,** When the community has a high WTP for urban parks, the government or developers have more financial resources to invest in garden design and construction (De-León Almaraz et al., 2024). Larger budgets allow for the use of higher quality materials, the addition of more complete facilities, and better maintenance, all of which contribute to improving the quality of urban park design (Zweig et al., 2021).

Motivation for More Innovative and User-Oriented Design. High WTP from the public often reflects high appreciation and expectations for the quality of city parks. This encourages designers and developers to innovate in designing gardens that are not only aesthetic, but also functional and sustainable (D. Wang & Shao, 2024). They tend to focus more on creating spaces that truly meet users' needs and preferences, which directly improves the quality of the design. **Public Participation and Community Involvement:** High WTP is usually followed by greater public participation in the planning and design process of city parks. When people are willing to pay more for quality parks, they tend to be more involved in providing input and feedback. This involvement ensures that the park design reflects the wants and needs of the community, so that the final quality of the city park is higher and in line with user expectations (Vinayavekhin et al., 2024).

Support for Sustainability and Maintenance, high WTP is also related to community support for long-term maintenance and sustainability of city parks. With a larger budget, gardens can be designed with elements that require less maintenance, such as local, climate-tolerant plants or energy-efficient infrastructure (Islam & Ali, 2024). Designs that take this sustainability aspect into account will be more durable and provide consistent quality over a long period of time. **Increasing Economic and Social Value.** City parks that are well designed and supported by high WTP can increase the economic and social value of the surrounding area. For example, properties near quality city parks often increase in value. In addition, well-designed parks can become centers of social, cultural and recreational activities, improving people's quality of life. Therefore, high WTP encourages investment in designs that contribute to broader economic and social benefits (Dowthwaite et al., 2024).

Utilization of Technology and Smart Design, when people have high WTP, there is an opportunity to incorporate advanced technology and smart design elements into city parks (van Hoof et al., 2021). For example, AI technology for green space management, automatic irrigation systems or energy-saving lighting can be added. This technology not only increases user comfort but also contributes to the overall efficiency and quality of urban garden design. Thus, the high WTP from the community provides a significant impetus for the development of high quality urban parks. Greater investment, community participation, and the application of advanced technology all contribute to improving the quality of design and function of urban parks, making them more beneficial and sustainable for communities (Shemesh & Parag, 2024).

H5: *There is a significant influence of willingness to pay on the quality of city park design.*

H6: *There is a significant indirect effect of social media on the quality of city park design through willingness to pay.*

H7: *There is a significant influence of AI on the quality of city park design through willingness to pay.*

4. Methodology

This research was carried out on the demographic group in Palangkaraya, namely 229,000. with a sample size of 200 people from various demographic groups.

Table 1

Instrument

	Artificial Intelligence	Social Media	quality of urban park design	willingness to pay
AI10	0.834			
AI11	0.708			
AI2	0.855			
AI3	0.849			
AI4	0.767			
AI5	0.781			
AI6	0.761			
AI7	0.834			
AI8	0.775			
AI9	0.775			
FD1		0.811		
FD10		0.837		
FD11		0.892		
FD12		0.814		
FD3		0.823		
FD4		0.893		
FD5		0.877		
FD8		0.897		
FD9		0.842		
KRT1			0.870	
KRT10			0.770	
KRT2			0.889	
KRT3			0.865	
KRT5			0.895	
KRT6			0.889	
KRT7			0.688	
KRT9			0.785	
WTP1				0.764
WTP10				0.849
WTP11				0.832
WTP12				0.817
WTP2				0.778
WTP3				0.765
WTP4				0.830
WTP5				0.865
WTP6				0.829
WTP7				0.746
WTP8				0.763
WTP9				0.797

Source : SEM PLS 2024

Table 2

Cronbach's alpha

	Cronbach's Alpha
Artificial Intelligence	0.935
Social Media	0.954
Quality of urban park design	0.936
Willingness to pay	0.950

Source: SEM PLS 2024

Based on the results of Cronbach's alpha analysis, it shows that the loading factor value is above >0.70 , so it can be concluded that each instrument has a high validity value.

Table 3
Reliability

	Composite Reliability
Artificial Intelligence	0.945
Social Media	0.961
Quality of urban park design	0.948
willingness to pay	0.956

Based on the results of the reliability test, the results show >0.70, so the research instrument is declared to have high reliability and can be used as a measuring tool in this research.

5. Result

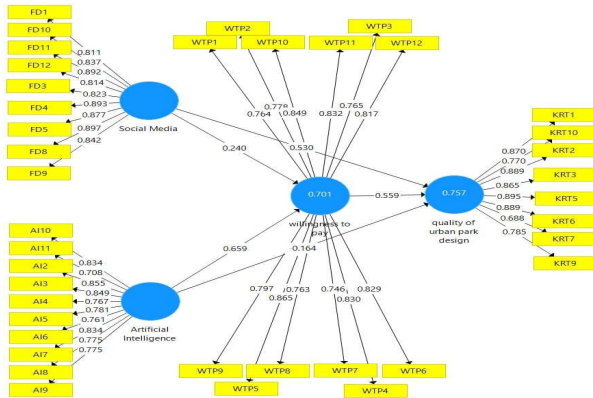


Fig. 1. Result of outer model

Source: SEM PLS 2024

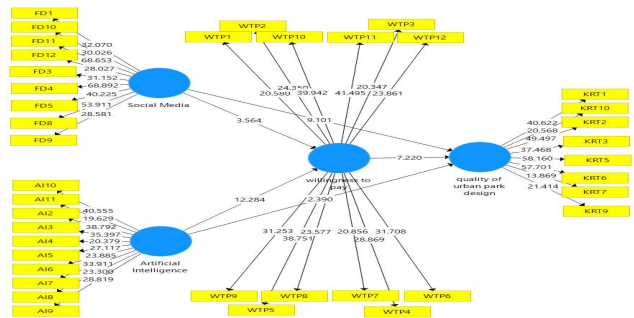


Fig. 2. Result of inner model

Table 4
Test Result of Path Coefficient

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Artificial Intelligence → quality of urban park design	0.164	0.166	0.068	2.390	0.017
Artificial Intelligence → willingness to pay	0.659	0.656	0.054	12.284	0.000
Social Media → quality of urban park design	0.530	0.526	0.058	9.101	0.000
Social Media → willingness to pay	0.240	0.242	0.067	3.564	0.000
Willingness to pay → quality of urban park design	0.559	0.566	0.077	7.220	0.000

Sources: SEM PLS 2024

Based on the results of the path coefficient test, it shows that of the five hypotheses, all hypotheses were accepted with a t-statistic value > 1.96 and a p-value < 0.05. So that this is declared entirely significant and the hypothesis is accepted,

Table 5
Test result of path coefficient

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Artificial Intelligence → willingness to pay → quality of urban park design	0.368	0.371	0.059	6.217	0.000
Social Media → willingness to pay → quality of urban park design	0.134	0.137	0.044	3.070	0.002

Sources: SEM PLS 2024

Based on the results of the path coefficient analysis of indirect influence, it was stated that two indirect influence hypotheses were accepted because they had a t-statistic value of >1.96 and a p-value <0.05 .

6. Discussion

6.1 *The first hypothesis: The relationship between the social media and the quality of urban park design*

Social media has a significant influence on the quality of urban park design due to its ability to facilitate public participation in the planning and design process (Dwivedi et al., 2021). Social media platforms such as Facebook, Instagram, and Twitter allow citizens to contribute by providing their input, ideas, and preferences about what they expect from city parks. This participation is critical because urban designers can collect data directly from the community, which can be used to design parks that better suit the needs and desires of local communities. With high involvement from citizens, the quality of urban park design tends to be better because it is based on input that reflects the real needs of the community (Sochacka et al., 2024).

In addition, social media makes it easier to spread information and education about the importance of public green spaces and their impact on quality of life (Y. Wang et al., 2024). Online campaigns and discussions about the benefits of good urban parks, such as improving mental health, reducing pollution and providing social space, can increase public awareness. With a better understanding of the importance of urban parks, communities are more likely to support improvement and innovation initiatives in park design. This support can take the form of direct involvement in the planning process, participation in surveys, or even advocacy for larger budget allocations from the government (Avornyo et al., 2024).

Social media also allows urban designers to follow global trends and take inspiration from various urban garden projects around the world. Through this platform, designers can easily access examples of innovative and sustainable design from various countries, which can then be adapted and applied to suit the local context. Trends such as vertical gardens, gardens with environmentally friendly concepts, and the integration of smart technology in public spaces can be inspiration taken from social media. By adopting the best ideas from various sources, the quality of urban park design can be improved, making them more modern, functional and in line with international standards (Helmi et al., n.d.).

Furthermore, social media acts as a public monitoring and evaluation tool for city park design projects. Once a park is built, the public can use social media to provide feedback on aspects they like or don't like. This feedback is invaluable to governments and urban designers because it provides direct insight into the effectiveness of the designs that have been implemented. With this platform, repairs and adjustments can be made more quickly and responsively, thereby improving the overall quality of the park over time (Syahrum, 2024).

Finally, social media also facilitates collaboration between stakeholders in the urban park design process. Governments, designers, architects, environmental experts and the public can use social media as a platform to discuss, share ideas and build consensus on how urban parks should be designed. This effective collaboration can result in decisions that are more inclusive and based on broader collective knowledge. In this way, the quality of urban park design improves because it is based on comprehensive input and considered from multiple perspectives, making it more relevant and beneficial to the entire community (Tan et al., 2023).

6.2 *The second hypothesis: The relationship between the AI and the quality of city park plans*

Artificial Intelligence (AI) has a significant influence on the quality of urban park design because of its ability to analyze data in depth and produce designs that are more efficient and targeted. AI can process various data, such as demographic data, land use patterns, community preferences, and environmental conditions, to create park designs that suit the specific needs of a community. With advanced data analysis capabilities, AI helps designers to identify the most effective design elements, optimize the use of space, and ensure that urban parks are not only beautiful but also functional and meet people's needs (Sriany Ersina, 2023).

Additionally, AI can speed up the urban park planning and design process by increasing efficiency in various stages of the project. For example, AI can be used to automate the creation of various design scenarios based on different data inputs, thereby speeding up the decision-making process. AI can also help in identifying potential issues or constraints in design early on, such as drainage issues or potential negative environmental impacts, allowing the design team to make necessary adjustments before implementation. This efficiency not only saves time but also reduces costs, ultimately allowing greater allocation of resources to improve the quality of the design itself (Richo et al., 2024).

Furthermore, AI enables the development of urban parks that are more adaptive and responsive to changing community needs and environmental conditions. With the help of AI, urban parks can be designed to adapt to climate change, for example by selecting

plant types that are more resistant to extreme weather conditions or by designing more efficient irrigation systems. AI can also be used to monitor and predict how urban parks will be used by society, so that their designs can be changed or improved over time to remain relevant and useful. This sustainability and adaptability are key factors in ensuring that the quality of urban parks remains high in the long term (Yunita & Hasri, 2022).

AI also plays an important role in increasing community interaction and involvement in the urban park design process. Through AI technology, virtual simulations or augmented reality can be used to give the public an idea of how the park will look and function once completed. This allows the community to provide more informative and detailed feedback before the final design is decided. In this way, AI not only helps create better designs, but also ensures that those designs align with people's expectations and needs, thereby increasing end-user satisfaction and the overall quality of urban parks (Pranata & Karmeli, 2024).

Finally, AI makes a major contribution to sustainability and innovation in urban park design. With AI's ability to predict future trends and integrate smart technologies, urban parks can be designed to be more sustainable and innovative. For example, AI can be used to manage the energy used in a garden, optimize lighting systems, or manage water use efficiently. Gardens powered by AI technology are not only aesthetically appealing but also more environmentally friendly and energy efficient. In this way, AI improves the quality of urban park design not only in terms of functionality and aesthetics, but also in terms of sustainability and innovation relevant to future challenges (Ningsi et al., 2020).

6.3 *The third hypothesis: The role of AI on willingness to pay*

The role of AI (Artificial Intelligence) has a significant influence on willingness to pay because AI is able to provide a more personalized and relevant experience for consumers. AI can analyze consumer behavior data in depth, including their preferences, habits and purchasing patterns, to then provide product recommendations that best suit individual needs. This customized experience creates added value for consumers, because they feel the product or service offered is truly relevant to their needs. As a result, consumers are more willing to pay higher prices for products that they feel are suitable and meet their personal expectations (Huang & Chueh, 2021).

Apart from that, AI also increases efficiency and convenience in the purchasing process, which contributes to increasing willingness to pay. With AI, various aspects of service, such as customer support, shipping, and product customization, can be performed more quickly and accurately. For example, AI-based chatbots can provide instant answers to customer questions, while AI systems in e-commerce can ensure that product recommendations and price offers are tailored to user preferences. When consumers feel the purchasing process is smooth and seamless, they are more likely to pay more because of the convenience and efficiency they gain (Shankar et al., 2022).

Lastly, AI plays a role in increasing consumers' perceived quality and trust in products or services, which in turn influences willingness to pay. AI technology can be used to continuously monitor and improve product quality, as well as to detect and fix problems before they reach consumers. For example, in the manufacturing industry, AI can ensure that manufactured products meet the highest quality standards, which increases consumer confidence. This trust can encourage consumers to be willing to pay more because they believe that the products they buy are of superior quality and free from defects (Benoit et al., 2024).

6.4 *The fourth hypothesis: The effect of AI on willingness to pay*

The significant influence of the role of Artificial Intelligence (AI) on *willingness to pay* (WTP) or willingness to pay is reflected in various aspects of consumer interactions with products and services. AI has the ability to personalize consumer experiences in real-time, which in turn increases the perceived value of the product or service offered. For example, AI can analyze individual preferences and offer product recommendations that suit their specific needs, thereby making consumers feel that the product is more valuable and worth buying, even at a higher price. This suggests that AI can increase WTP by creating more relevant and satisfying consumer experiences (Guizzardi et al., 2022).

Additionally, AI plays a role in increasing operational efficiency and cost savings for companies, allowing for more competitive pricing without compromising product or service quality. With lower costs and more efficient processes, companies can offer lower prices or maintain current prices while increasing their profit margins. When consumers perceive that they are getting a high-quality product at a fair price, their willingness to pay, even a higher price, tends to increase. This indicates that AI not only helps increase product value but also increases price attractiveness in the eyes of consumers (Zhang et al., 2023).

Lastly, AI can facilitate a better understanding of consumer behavior through big data analysis, allowing companies to devise more effective pricing strategies. With a deeper understanding of what drives consumer purchasing behavior, companies can set

more targeted prices, which in turn can increase WTP. For example, AI can identify consumer segments that are willing to pay more for additional features or premium services, allowing companies to develop products that are more valuable to those segments. Thus, AI contributes significantly to increasing WTP through smarter and more targeted pricing strategies (Nag & Goswami, 2024).

6.5 The fifth hypothesis: The effect of willingness to pay on the quality of city park design

Willingness to pay (WTP) or willingness to pay has a significant influence on the quality of urban park design because WTP reflects how much the community values and is willing to fund the project. When people have a high WTP for a city park, this shows that they value the benefits the park offers, such as green space, recreational facilities, and a better environment. As a result, park designers and managers will be more encouraged to design high quality parks that meet community expectations and needs, because there is sufficient financial support to realize these designs (Elasu et al., 2023).

In addition, a high WTP allows the government or management to allocate a larger budget for the development and maintenance of city parks. With sufficient funds, various design elements that improve the quality of the park, such as beautiful landscapes, sports facilities, children's play areas, and other supporting infrastructure, can be realized. The quality of a good urban park design is not only determined by the design idea, but also by the ability to realize the design with high quality materials, technology and labor. Therefore, high WTP directly contributes to improving the quality of urban parks through better resource allocation (Calzada, 2023).

Finally, WTP also reflects community participation and involvement in the planning and development process of city parks. When people are willing to pay more for quality urban parks, this shows their commitment to the success of the project. This active participation often translates into constructive feedback and ongoing support for maintaining and maintaining the park after its completion. Therefore, a high WTP not only influences the quality of the initial design of a city park, but also the long-term quality of the park, due to ongoing community support for park maintenance and improvement (Zeng et al., 2023).

6.6 The sixth hypothesis: The mediating effect of social media on the quality of city park design through willingness to pay

The influence of social media on the quality of urban park design can be significant indirectly through increasing the willingness to pay of the community. Social media functions as a platform to spread information, ideas and inspiration about ideal urban garden designs. When people are exposed to interesting design concepts on social media, they may be more motivated to support efforts to improve the quality of urban parks. This support is often reflected in a higher willingness to pay, either through direct contributions or through approval of government budget allocations for projects involving urban park improvements and innovations (Kim et al., 2024).

Furthermore, social media allows people to engage in public discussions regarding the importance of quality green spaces in urban environments. As the public becomes more aware of the benefits of urban parks through campaigns and discussions on social media, they are more likely to support initiatives that improve the quality of park design. People's willingness to pay more, whether in the form of higher taxes or donations, allows governments or private parties to invest more resources in designing and building better urban parks. Thus, social media indirectly facilitates the flow of funds needed to improve the quality of park design through increasing willingness to pay (Alsos et al., 2024).

Finally, social media also plays a role in strengthening trust and transparency in urban park design projects. When information about budget usage and project progress is widely shared via social media, people have more confidence that their contributions will be put to good use. This increases willingness to pay, because people feel more confident that the funds they donate or the taxes they pay will produce quality city parks. With increased willingness to pay, urban park designers have more resources to create public spaces that meet higher aesthetic and functional standards, thereby improving the overall quality of urban park design (Parappallil Mathew & Bangwal, 2024).

6.7 The seventh hypothesis: The effect of AI on the quality of city park design through willingness to pay

The influence of the role of Artificial Intelligence (AI) on the quality of urban park design through *willingness to pay* (WTP) can be considered a significant indirect influence because AI can improve the way citizens perceive and assess the value of urban park projects. AI has the ability to collect and analyze big data about people's preferences and needs in depth. By understanding what citizens really value, such as certain features in city parks, AI can help design parks that better suit people's desires. If the park is designed according to people's expectations and needs, they will be more willing to pay more, which increases WTP and in turn influences the quality of the design through greater allocation of funds (Almaraz et al., 2024).

Additionally, AI can simplify the urban park design process by providing sophisticated simulations and predictive models. This technology allows designers to evaluate various design options more effectively and efficiently, and identify the elements that are most attractive and needed by society. With more accurate information and better predictions about how the community will respond to various design elements, project managers can create higher quality urban parks that meet community expectations. The high quality of design resulting from the use of AI can increase WTP because people will feel that they get greater value from their contributions (Zweig et al., 2021).

Finally, AI can improve transparency and communication between project managers and the community. By using AI to facilitate community feedback and participation in the design process, the community feels more involved and cared for in the project. This could lead to increased confidence and support for urban park projects. When people feel more involved and supportive of the project, they will be more inclined to pay more, increasing WTP. Thus, although AI's influence on the quality of urban park design occurs indirectly through WTP, AI's contribution in understanding people's preferences and increasing their involvement plays an important role in achieving high-quality design outcomes (D. Wang & Shao, 2024).

7. Conclusion

In conclusion, the role of social media and AI (Artificial Intelligence) significantly influences increasing people's willingness to pay, which has a positive impact on the quality of urban park design in Palangkaraya City, Central Kalimantan. Social media serves as an interactive platform that allows citizens to share ideas, provide feedback, and participate in the city planning process. This increases public awareness and appreciation of the importance of quality public spaces, which is reflected in their readiness to support city park projects through increasing willingness to pay. In addition, AI amplifies this effect by providing personalized recommendations and improving efficiency and service quality, so that people are more confident about investing in projects that they feel have high value and benefits.

The implication is that the increase in willingness to pay is driven by interactions on social media and the use of AI provides greater resources for governments and city designers to design and build high-quality city parks. With adequate financial support, city park projects in Palangkaraya can focus more on creating green spaces that are not only aesthetic but also functional and sustainable. High community involvement through social media and the use of AI in design ensures that the resulting city park better suits the community's needs and desires, thereby contributing to improving the overall quality of life for city residents.

8. Limitation

Although social media and AI have an important role in increasing willingness to pay and the quality of urban park design, there are several limitations that need to be considered. First, not all segments of society have equal access to digital technology and social media, so input received through these platforms may not be fully representative. This can result in a bias in planning that favors more digitally active groups, while the needs of underrepresented groups, such as senior citizens or people in remote areas, may be overlooked.

The use of AI in urban planning also faces challenges related to data integration and privacy. Although AI can process big data to provide useful insights, the quality of AI output depends largely on the quality of the data input. If the available data is limited or inaccurate, the resulting AI recommendations may not reflect the true needs of society. Additionally, concerns regarding the privacy of personal data could be a barrier to collecting the data required for AI analysis, which could ultimately reduce the effectiveness of this technology in supporting urban park design.

limitations in budget and resources can also limit the implementation of recommendations generated from social media and AI. Even though people's willingness to pay can increase, without adequate budget support from the government or investors, the implementation of the resulting design ideas may remain limited. In addition, the process of designing and building a quality urban park requires time and good coordination between various stakeholders, which can be a challenge in ensuring that all input and recommendations can be implemented effectively.

Acknowledgment

The authors would like to thank the rector who helped us for the accomplishment of this research. We are also delighted to the principal and English teacher at the high school who gave permission to the researcher to conduct this research.

References

- Alsos, O. A., Saghafian, M., Veitch, E., Petermann, F. M., Sitompul, T. A., Park, J., Papachristos, E., Eide, E., Breivik, M., & Smogeli, Ø. (2024). Lessons learned from the trial operation of an autonomous urban passenger ferry. *Transportation Research Interdisciplinary Perspectives*, 26(January). <https://doi.org/10.1016/j.trip.2024.101142>
- Avornyo, P., Feng, Z., Liu, L., Boadi, E. A., Azamela, J. C., & Opata, C. N. (2024). The role of OSL in mobile banking application discontinuance: A technological innovation dilemma. *Technovation*, 131(December 2023), 102946. <https://doi.org/10.1016/j.technovation.2023.102946>
- Benoit, S., Altrichter, B., Grewal, D., & Ahlbom, C. P. (2024). Autonomous stores: How levels of in-store automation affect store patronage. *Journal of Retailing*, 100(2), 217–238. <https://doi.org/10.1016/j.jretai.2023.12.003>
- Calzada, I. (2023). Disruptive Technologies for e-Diasporas: Blockchain, DAOs, Data Cooperatives, Metaverse, and ChatGPT. *Futures*, 154(October), 103258. <https://doi.org/10.1016/j.futures.2023.103258>
- De-León Almaraz, S., Kocsis, T., Azzaro-Pantel, C., & Szántó, Z. O. (2024). Identifying social aspects related to the hydrogen economy: Review, synthesis, and research perspectives. *International Journal of Hydrogen Energy*, 49(May 2023), 601–618. <https://doi.org/10.1016/j.ijhydene.2023.10.043>
- Dowthwaite, A., Cook, D., & Cox, A. L. (2024). Privacy preferences in automotive data collection. *Transportation Research Interdisciplinary Perspectives*, 24(January), 101022. <https://doi.org/10.1016/j.trip.2024.101022>
- Dwivedi, Y. K., Ismagilova, E., Hughes, D. L., Carlson, J., Filieri, R., Jacobson, J., Jain, V., Karjaluoto, H., Kefi, H., Krishen, A. S., Kumar, V., Rahman, M. M., Raman, R., Rauschnabel, P. A., Rowley, J., Salo, J., Tran, G. A., & Wang, Y. (2021). Setting the future of digital and social media marketing research: Perspectives and research propositions. *International Journal of Information Management*, 59(July 2020), 102168. <https://doi.org/10.1016/j.ijinfomgt.2020.102168>
- Elasu, J., Ntayi, J. M., Adaramola, M. S., & Buyinza, F. (2023). Drivers of household transition to clean energy fuels: A systematic review of evidence. *Renewable and Sustainable Energy Transition*, 3(January), 100047. <https://doi.org/10.1016/j.rset.2023.100047>
- Guizzardi, A., Mariani, M. M., & Stacchini, A. (2022). A temporal construal theory explanation of the price-quality relationship in online dynamic pricing. *Journal of Business Research*, 146(July 2021), 32–44. <https://doi.org/10.1016/j.jbusres.2022.03.058>
- Helmi, A. Y., Martuni, K., & Dimmera, B. G. (n.d.). Pemanfaatan Ruang Terbuka Hijau Dalam Meningkatkan Kualitas Lingkungan Kabupaten Bengkayang. *JURDIAN: Jurnal Pengabdian Bukti Pengharapan*, 78–88.
- Huang, D. H., & Chueh, H. E. (2021). Chatbot usage intention analysis: Veterinary consultation. *Journal of Innovation and Knowledge*, 6(3), 135–144. <https://doi.org/10.1016/j.jik.2020.09.002>
- Islam, M. T., & Ali, A. (2024). Sustainable green energy transition in Saudi Arabia: Characterizing policy framework, interrelations and future research directions. *Next Energy*, 5(April), 100161. <https://doi.org/10.1016/j.nxener.2024.100161>
- Kambuaya, A. (2021). EVALUASI TARIF ANGKUTAN UMUM LYN N BERDASARKAN BIAYA OPERASIONAL KENDARAAN, ABILITY TO PAY, DAN WILLINGNESS TO PAY (Studi kasus: Angkot Lyn N, Rute Terminal Bratang – JMP, Kota Surabaya). *Rekayasa: Jurnal Teknik Sipil*, 5(2), 11. <https://doi.org/10.53712/rjrs.v5i2.1022>
- Kim, E., Worley, M. M., Yum, S., & Law, A. V. (2024). Pharmacist Roles in the Medication Use Process: Qualitative Analysis of Stakeholder Perceptions. In *Journal of the American Pharmacists Association*. American Pharmacists Association. <https://doi.org/10.1016/j.japh.2024.102186>
- Nag, D., & Goswami, A. K. (2024). How to develop the walking environment for its ‘consumers’? A conjoint answer derived from people’s perception of link and network. *Sustainable Cities and Society*, 100(October 2023), 105031. <https://doi.org/10.1016/j.scs.2023.105031>
- Ningsi, R., Asnawi, A., & Abdullah, A. (2020). Effect of intrinsic factors on farmers’ willingness to pay on the success of artificial insemination of Bali cattle. *IOP Conference Series: Earth and Environmental Science*, 492(1), 8–13. <https://doi.org/10.1088/1755-1315/492/1/012161>
- Parappallil Mathew, B., & Bangwal, D. (2024). People centric governance model for smart cities development: A systematic review, thematic analysis, and findings. *Research in Globalization*, 9(July), 100237. <https://doi.org/10.1016/j.resglo.2024.100237>
- Pranata, Y., & Karmeli, E. (2024). Analisis Faktor Willingness To Pay Pengunjung Pada Objek Wisata Teba Panotang Kabupaten Sumbawa. *Samalewa: Jurnal Riset & Kajian Manajemen*, 4(1), 164–177. <https://doi.org/10.58406/samalewa.v4i1.1611>
- Richo, Y., Rizky, D., & Khoirun Nisa, F. (2024). Manajemen desain fasilitas publik multifungsi yang aman di RTH Surabaya dengan Metode Function-Behavior-Structure. *Productum: Jurnal Desain Produk (Pengetahuan Dan Perancangan Produk)*, 7(1), 37–44. <https://doi.org/10.24821/productum.v7i1.10548>
- Shankar, A., Dhir, A., Talwar, S., Islam, N., & Sharma, P. (2022). Balancing food waste and sustainability goals in online food delivery: Towards a comprehensive conceptual framework. *Technovation*, 117(July), 102606. <https://doi.org/10.1016/j.technovation.2022.102606>
- Shemesh, A., & Parag, Y. (2024). Sharing a car with your next-door neighbor: Motivations and barriers to adoption of low-carbon mobility in Israel. *Energy Research and Social Science*, 114(November 2023), 103586. <https://doi.org/10.1016/j.erss.2024.103586>

- Sochacka, B. A., Renouf, M. A., & Kenway, S. J. (2024). Water-related liveability assessment: Indicators for evaluation of urban design. *Sustainable Cities and Society*, 101(December 2023), 105103. <https://doi.org/10.1016/j.scs.2023.105103>
- Sriany Ersina. (2023). Menciptakan Kota Cerdas: Memanfaatkan Ai (Artificial Intelligence) Untuk Pengembangan Ruang Publik Perkotaan Yang Cerdas. *Seminar Nasional Dies Natalis 62, 1*, 591–595. <https://doi.org/10.59562/semnasdies.v1i1.1109>
- Syahrum, A. (2024). Arsitektur dan Pemanfaatan Ruang Terbuka: Meningkatkan Keterhubungan Sosial dan Lingkungan. *WriteBox*, 1–12. <https://writebox.cloud/index.php/wb/article/view/97%0Ahttps://writebox.cloud/index.php/wb/article/download/97/97>
- Tan, F., Kuang, T. Y., Yang, D. J., Jia, Z., Li, R. R., & Wang, L. (2023). The higher the cuteness the more it inspires garbage sorting intention? *Journal of Cleaner Production*, 426(October), 139047. <https://doi.org/10.1016/j.jclepro.2023.139047>
- van Hoof, J., Marston, H. R., Kazak, J. K., & Buffel, T. (2021). Ten questions concerning age-friendly cities and communities and the built environment. *Building and Environment*, 199(April), 107922. <https://doi.org/10.1016/j.buildenv.2021.107922>
- Vinayavekhin, S., Banerjee, A., & Li, F. (2024). “Putting your money where your mouth is”: An empirical study on buyers’ preferences and willingness to pay for blockchain-enabled sustainable supply chain transparency. *Journal of Purchasing and Supply Management*, 30(2), 100900. <https://doi.org/10.1016/j.pursup.2024.100900>
- Wang, D., & Shao, X. (2024). Research on the impact of digital transformation on the production efficiency of manufacturing enterprises: Institution-based analysis of the threshold effect. *International Review of Economics and Finance*, 91(December 2023), 883–897. <https://doi.org/10.1016/j.iref.2024.01.046>
- Wang, Y., Rigolon, A., & Park, K. (2024). Transit to parks initiatives in the U.S. and Canada: Practitioners’ perspectives. *Transport Policy*, 154(February), 84–95. <https://doi.org/10.1016/j.tranpol.2024.06.007>
- Yunita, & Hasri, D. A. (2022). Analisis Nilai Ekonomi Objek Wisata Pantai Ai Loang Dengan Pendekatan Willingness To Pay (Wtp). *Nusantara Journal Economics*, 4(1), 1–9.
- Zeng, L., Li, R. Y. M., & Zeng, H. (2023). Weibo users and Academia’s foci on tourism safety: Implications from institutional differences and digital divide. *Heliyon*, 9(3), e12306. <https://doi.org/10.1016/j.heliyon.2022.e12306>
- Zhang, H., Qiu, R. T. R., Wen, L., Song, H., & Liu, C. (2023). Has COVID-19 changed tourist destination choice? *Annals of Tourism Research*, 103, 103680. <https://doi.org/10.1016/j.annals.2023.103680>
- Zweig, D., Tsai, K. S., & Singh, A. D. (2021). Reverse entrepreneurial migration in China and India: The role of the state. *World Development*, 138, 105192. <https://doi.org/10.1016/j.worlddev.2020.105192>



© 2025 by the authors; licensee Growing Science, Canada. This is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC-BY) license (<http://creativecommons.org/licenses/by/4.0/>).