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Analysis of Socioeconomic and Ecological Factors Affecting Willingness to Pay in the Glintung Go Green Environmental Conservation Initiative

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ABSTRACT

This study examines the impact of socioeconomic and ecological factors on the willingness to pay (WTP) for environmental conservation within the Glintung Go Green initiative. The research analyzes key variables, including income, education, employment status, age), gender, length of residency, flood frequency, and flood impact, to understand their influence on WTP. Using Smart-PLS, the results show that income, education, and employment status positively affect social and ecological factors, which in turn significantly influence WTP (coefficient = 0.533). However, age and length of residency display a negative relationship, suggesting that younger and more recent residents may be more willing to contribute to conservation efforts. This study highlights the importance of socioeconomic improvements to enhance community readiness for supporting environmental initiatives. The findings provide valuable insights for policymakers aiming to promote sustainable practices in urban communities, particularly by leveraging socioeconomic and ecological factors that motivate financial contributions to conservation projects like Glintung Go Green.

Keywords: Ecological Factors; Environmental conservation; Glintung Go Green; Socioeconomic Factors; Willingness to Pay

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INTRODUCTION

It is suspected that since the 1970s, there has been population growth in urban areas in Indonesia, especially from 1980 to 1990. This condition continues to increase until 2025, which is caused by urbanization. This is due to the significant development of large cities that are the destinations for migrants to find work (Hidayati, 2021). Malang City is a big city, of course, there are migrants who aim to find work. Based on the study of the urban index of Malang City 2019-2023, it continues to experience a significant increase (Puspita, 2024), likewise, in the Glintung area of Malang City. Based on the phenomenon of Glintung Village being close to one of the largest cigarette factories in Malang City, there are many immigrants, so the population is getting denser. Glintung Village is close to the watershed area river (DAS) and measures around 2 meters with poor flow. This is a factor causing flooding in Glintung Village. Then came the Glintung Go Green (3G) initiative in Malang, Indonesia. It aims to address urban environmental challenges by encouraging community-driven conservation to reduce flood risk and increase green open space.

Basically, conservation is for sustainability in addressing environmental problems. One of the causes of flooding is poor community behavior in managing waste because they do not dispose of waste in its place. There are challenges in managing waste because funding is needed (Nurmalasari et al., 2025). The amount of waste generated by households is often scattered on the streets, which raises concerns among residents about the impact of unmanaged waste (Dewi et al., 2025). If waste is not managed properly, it can cause disasters, such as floods. Therefore, disaster mitigation is needed, but in its implementation, conflicts between communities can occur.

One important tool in dealing with disasters and conflicts is the use of local knowledge through a community-based approach (Iqbal et al., 2025). Glintung Village applies community-based waste management techniques, urban greening, and flood prevention through a cooperative approach. Of course, these conditions are transformative changes led by local communities in a city that offers an approach to achieving sustainability but is tailored to the unique conditions of each context (Moallemi et al., 2020). Through environmental education and local economic empowerment, these programs not only improve the quality of life of the community but also make the environment greener.

Basically, environmental conservation, including flood disaster mitigation, requires funds from both the government and the community. Likewise, what happened in Glintung Village, namely, to build Glintung Go Green, the community's willingness to participate or willingness to pay (WTP) is needed. This refers to a study that focuses on the analysis of the community's WTP for initiatives and the factors that influence it. Previous studies have shown that socioeconomic variables, such as income and education, significantly affect WTP for environmental initiatives (Cao & Zhang, 2022; Green & Parker, 2022; Grosvenor & Wilkins, 2023; Kim et al., 2022) in measuring WTP based on the contingency method valuation (Bateman & Jones, 2021; Evans & Garcia, 2024; Foster & Nguyen, 2024; Hardesty & Kuhns, 2022).

Likewise, this paper presents the results of descriptive research based on factors that influence people's WTP for Glintung Go Green. Using Structural analysis tools Equation Modeling (SEM) with Partial Least Squares (SmartPLS), this study aims to determine the correlation between socioeconomic and ecological factors with WTP in Glintung Go Green.

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LITERATURE REVIEW

Community-based environmental conservation initiatives are increasingly recognized as an important mechanism for addressing urban environmental challenges. Citizens' willingness to financially support these initiatives, or WTP, is influenced by a variety of socioeconomic, ecological, and demographic factors. A comprehensive understanding of these determinants is essential for designing effective and sustainable programs. These factors are outlined below:

Socio-Economic Factors

Socioeconomic variables such as income, education, and employment status significantly influence WTP for conservation efforts. Banerjee and Mitra (2023) emphasized that higher income levels directly increase an individual's financial capacity to contribute to environmental initiatives. This is corroborated by Cao and Zhang (2022), who highlighted that income stability allows households to prioritize financial support for urban green infrastructure projects. Education also plays a significant role in shaping WTP. Guila et al. (2023) and Shoaib (2022) showed that higher education levels increase environmental awareness, fostering a stronger commitment to conservation initiatives. Educated individuals are more likely to understand the long-term benefits of conservation programs and actively engage in supporting them. Employment status is another important factor. Davidson (2022) and Finn & Darby (2022) noted that stable employment allows individuals to allocate resources to community-based projects, increasing their WTP. Employment provides a sense of security that motivates residents to invest in collective goods such as environmental conservation.

Ecological Factors

Perception of environmental risks and experience with ecological challenges are important determinants of WTP. Flooding, a common environmental hazard in urban areas, has been shown to significantly influence residents' support for conservation programs. Patel & Sharma (2023) and Vasquez & Mendez (2022) show that frequent flooding experiences increase awareness of environmental risks and motivate residents to participate in mitigation efforts. Broader perceptions of environmental impacts also drive WTP. According to Young and Liu (2023), individuals who perceive severe environmental degradation are more likely to contribute to conservation initiatives. Similarly, Finn and Darby (2022) suggest that perceiving tangible benefits of conservation, such as reduced flood risk and improved urban environments, strengthens community engagement. Ecology can be defined as the study of the relationship of animals and plants to the organic and inorganic environment. In comparison, economics is defined as the study of how humans make their lives to fulfill their needs and desires. Furthermore, it is integrated into ecological economics, which means the study of the relationship between human households and the improvement of nature. In other words, it is about the interaction between economic systems and ecological systems (Common & Sigrid, 2005).

Interaction of Socio-Economic, Ecological, and Demographic Factors

The integration of socio-economic, ecological, and demographic factors provides a holistic understanding of WTP. Kim et al. (2022) and Rodriguez & Torres (2023) stated that these factors interact to shape residents' perceptions and support for conservation initiatives. For example, individuals with higher incomes and education levels may be more willing to pay for conservation if they frequently experience environmental risks such as flooding. In addition, willingness to contribute financially often results in increased satisfaction with the outcomes of conservation programs. Davidson (2022) and Shoaib (2022) noted that WTP increases residents' sense of ownership and trust in

the sustainability of community-based initiatives. Therefore, it is necessary to know the public's perception of their knowledge so that they are willing to behave in an environmentally friendly manner. This can be applied to green consumers, namely those who are willing to buy green products (Dewi et al., 2025). Thus, it is necessary to make society care about the environment (Iqbal et al., 2025) holistically, which is applied to the circular economy. Circular economic behavior is inviting the public to implement zero waste, for example, by managing waste (Nurmalasari et al., 2025).

RESEARCH METHOD

This study uses a mixed methods approach, combining quantitative and qualitative data to understand WTP and the factors that influence it. Data were collected through a survey given to 33 samples of Glintung residents, including indicators such as age, gender, education, income, and frequency of flood experience. Then, descriptive analysis based on the concept of SEM based on SmartPLS. This is used to determine the relationship between variables. This is shown in Figure 1, illustrating the path analysis model obtained from SmartPLS, which shows the influence of social, economic, and ecological factors on WTP.

Figure 1. Path Analysis Model of Social, Economic, and Ecological Factors on WTP

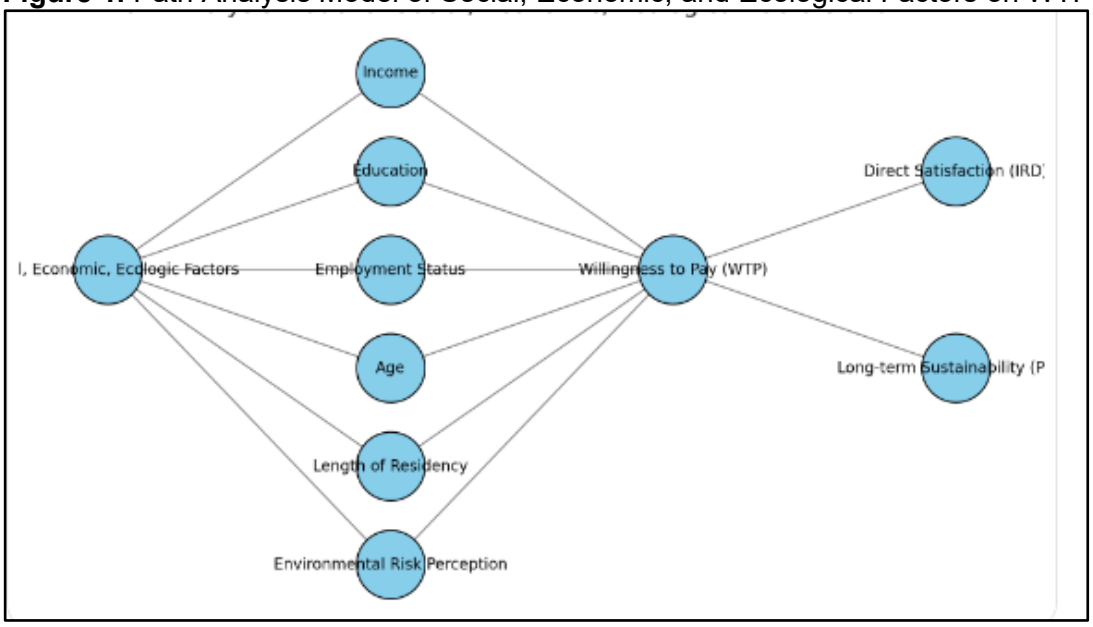

Figure 1 illustrates the correlation between socio-economic and ecological factors and the WTP. Economic and ecological factors include variables such as income, education, employment status, age, length of residence in Glintung Village, and community perception of flood disaster risk. The WTP factor consists of the amount respondents are willing to contribute in Rupiah and their perception of environmental sustainability, particularly regarding conservation efforts and flood mitigation initiatives in Glintung Village, such as the construction of biopores and injection wells. These efforts aim to ensure long-term sustainability.

Data collection was conducted using a survey method with questionnaires to obtain quantitative data in the form of ratio measurements, while qualitative data was gathered based on respondents' perceptions using a Likert scale ranging from 1 to 5. Additionally, in-depth interviews were conducted with key informants, including the pioneers of the Glintung Go Green initiative, to gain further insights.

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RESULTS

Table 1. Descriptive Statistics of Research Variables

Variable	Mean	Std. Deviation	Min	Max
Income (Rp/month)	3,200,000	1,500,000	1,000,000	8,000,000
Education Level	2.1	0.9	1	4
Employment Status	1.7	0.5	1	2
Age (years)	42.3	12.8	20	70
Length of Residency	10.4	8.5	1	25
Flood Frequency	3.2	1.2	1	5
WTP (Rp)	150,000	50,000	10,000	500,000

Source: Computational Results

Table 1 presents descriptive statistics that summarize the variables, including the mean, median, standard deviation, minimum, and maximum values. The average monthly income of respondents is 3.2 million Rupiah. The average education level corresponds to high school, while the majority of respondents are privately employed. The average age of respondents is 42 years, with an average residency duration of approximately 10 years in Glintung Village. On average, respondents have experienced major floods three times. In terms of WTP or contribution to the development of Glintung Go Green, the average amount is around 150 thousand Rupiah. Furthermore, the results of the path model analysis are summarized in Table 2, as presented below.

Table 2. Results of Path Model Analysis

Variables	Path Coefficient (β)	Significance (p-value)	Connection	Interpretation
Income	0.647	< 0.01	Positive	Higher-income increases the desire to contribute to environmental conservation.
Education	0.771	< 0.001	Positive	Higher education increases awareness and participation in conservation initiatives.
Employment Status	0.533	< 0.05	Positive	Stable employment status has a positive effect on WTP.
Age	-0.386	< 0.05	Negative	Younger individuals are more likely to support conservation efforts.
Length of Stay	-0.103	< 0.05	Negative	New residents showed a higher willingness to contribute compared to long-term residents.
Flood Frequency	0.529	< 0.01	Positive	Increased perception of flood risk strengthens the motivation to support conservation programs.
Environmental Impact Felt	0.370	< 0.05	Positive	Awareness of environmental impacts encourages greater community

				participation.
Immediate Gratification (IRD)	0.775	< 0.001	Positive	WTP increases satisfaction with conservation program outcomes.
Perceived Long-Term Sustainability (PGG)	0.749	< 0.001	Positive	High WTP builds confidence in the long-term sustainability of the program.

Source: Computational Results

Table 2 presents a detailed analysis of the factors influencing WTP for environmental conservation programs, highlighting the role of socioeconomic, demographic, ecological, and financial variables. Socioeconomic factors, particularly income and education, emerge as the strongest positive contributors to WTP. This finding aligns with previous research by Banerjee & Mitra (2023) and Shoaib (2022), which underscores the importance of financial capacity and educational attainment in fostering environmental participation. Additionally, employment status plays a crucial role, as individuals with stable employment are more confident in their ability to financially support conservation efforts, further reinforcing the connection between economic security and WTP.

Demographic factors, including age and length of residence, exhibit a negative effect on WTP, suggesting that younger and newer residents demonstrate greater enthusiasm for supporting conservation initiatives. This trend highlights the need for targeted outreach strategies aimed at engaging older and long-term residents, who may require additional motivation to participate in environmental programs. Understanding these demographic dynamics can help policymakers tailor communication and engagement efforts to ensure broader community involvement.

Ecological factors, particularly flood frequency and perceived environmental impact, positively influence WTP. Residents who have experienced frequent flooding or who recognize broader environmental consequences are more inclined to contribute financially to conservation programs. This finding suggests that direct and indirect exposure to environmental risks serves as a powerful motivator for participation, reinforcing the idea that personal experience with ecological hazards heightens awareness and commitment to sustainability initiatives.

Financial factors, specifically the ability to pay, play a crucial role in shaping both immediate and long-term perceptions of conservation programs. Immediate satisfaction (IRD) and perceived long-term continuity (PGG) are strongly influenced by WTP, indicating that financial contributions not only enhance residents' short-term satisfaction with program outcomes but also strengthen their confidence in the initiative's long-term sustainability. This underscores the importance of structuring conservation programs in ways that demonstrate both immediate benefits and lasting environmental impact.

Overall, Table 2 encapsulates the intricate relationships among these variables, providing a comprehensive framework for understanding WTP in the context of environmental conservation. The findings offer valuable insights for policymakers in designing inclusive, targeted, and sustainable conservation strategies. These relationships are further illustrated in Figure 2, which visually represents the interactions among key factors driving community participation and financial support for environmental initiatives.

Figure 2. Analysis of the SmartPLS Model

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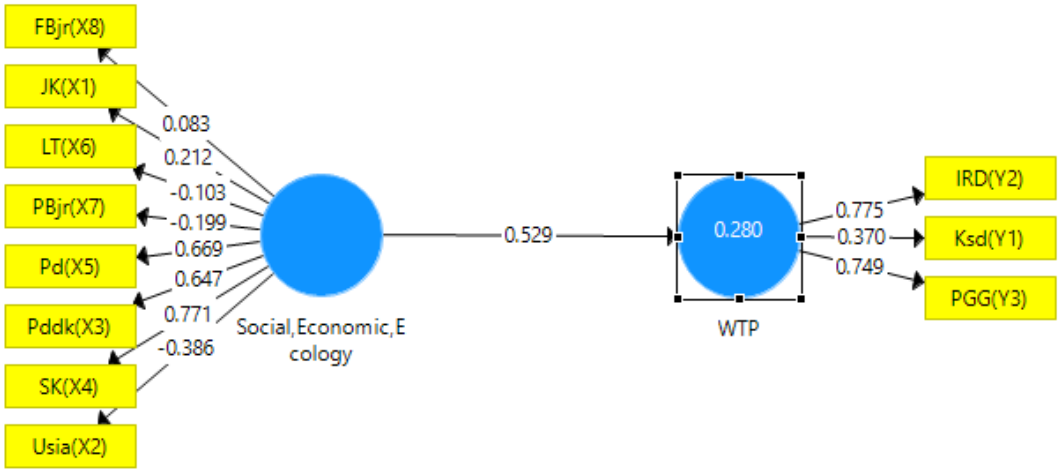

The diagram represents the results of a SmartPLS Structural Equation Modeling (SEM) analysis, illustrating the relationships between socioeconomic, ecological, and demographic factors (Social, Economic, Ecology) and WTP for environmental conservation. Below is a detailed breakdown of the analysis based on the provided model:

Latent Variables and Their Indicators

Exogenous Latent Variable: Social, Economic, Ecology

The latent variable Social, Economic, Ecology represents an integration of socioeconomic and ecological factors that collectively influence WTP for conservation programs. This variable encompasses multiple indicators, each contributing to the overall explanatory power of the model. Flood risk perception (FBjr) has a relatively weak positive impact on WTP, while gender (JK) plays a moderate role, suggesting potential differences in conservation support across demographic groups. Length of residency (LT) and perceived environmental impact (PBjr) exhibit negative path coefficients, indicating that longer-term residents and those with lower perceived environmental risks may be less inclined to contribute financially. Income (Pd) and education (Pddk) are the strongest positive indicators, reaffirming that financial capability and awareness are key drivers of environmental commitment. In contrast, employment status (SK) and age (Usia) show negative relationships, suggesting that job stability and older age groups may not necessarily translate into higher WTP. Overall, social, economic, and ecology have a substantial effect on WTP, as evidenced by its path coefficient of 0.529, highlighting the significant interplay of these factors in shaping conservation-related financial contributions.

Endogenous Latent Variable: Willingness to Pay (WTP)

WTP, as an endogenous latent variable, serves as a crucial determinant of conservation program outcomes. It is directly influenced by Social, Economic, and Ecology, with a strong path coefficient of 0.529, reinforcing the idea that socioeconomic and ecological conditions shape financial commitment to sustainability efforts. Moreover, WTP has far-reaching effects on three key outcome variables. Direct satisfaction (IRD) demonstrates the highest impact, with a path coefficient of 0.775, suggesting that individuals who contribute financially derive significant fulfillment from their involvement. Immediate satisfaction (Ksd) follows with a moderate effect, reflecting residents' perception of tangible short-term benefits from conservation initiatives. Lastly, long-term sustainability (PGG) is strongly influenced by WTP, with a path coefficient of 0.749, indicating that financial contributions foster trust in the program's longevity. These findings underscore the pivotal role of WTP in ensuring both immediate and enduring success in

environmental conservation efforts.

DISCUSSION

Implications for Conservation Programs

The findings from the literature highlight critical implications for conservation programs, particularly in ensuring their effectiveness and long-term sustainability. One key consideration is socioeconomic tailoring, where programs should incorporate tiered financial models to enable individuals across different income levels to participate. By doing so, conservation initiatives can foster inclusivity and encourage contributions from a broader segment of the population. Additionally, educational campaigns play a crucial role in increasing public awareness of environmental risks and the benefits of conservation. Policymakers should prioritize these campaigns to enhance individuals' WTP for conservation efforts. Furthermore, targeted outreach strategies should be developed to engage older and long-term residents, who may require additional motivation to support environmental initiatives. These groups often exhibit lower participation rates, making it essential to tailor engagement strategies that address their specific concerns and incentives.

The research also reveals significant relationships between various socioeconomic factors and conservation engagement. Income exhibits a strong positive effect on social, economic, and ecological outcomes (Pd, 0.669), reinforcing previous findings by Cao and Zhang (2022), which highlight financial capability as a key driver of environmental engagement. Similarly, education (Pddk, 0.771) emerges as the strongest predictor of conservation participation, aligning with studies by Shoaib (2022) that suggest higher education levels enhance environmental awareness. Conversely, age (Usia, -0.386) negatively impacts conservation engagement, indicating that younger individuals are more likely to support sustainability initiatives. This pattern is consistent with findings by Rodriguez and Torres (2023), who observed that younger populations demonstrate greater motivation in environmental programs. Employment status (SK, -0.386) also contributes negatively, suggesting that financial stability does not necessarily translate into higher conservation involvement. This complex relationship warrants further investigation to understand how work commitments and financial priorities influence environmental contributions.

Beyond these direct relationships, WTP serves as a crucial mediating factor influencing conservation outcomes. A strong positive relationship (IRD, 0.775) indicates that higher WTP levels enhance immediate satisfaction with conservation program outcomes, a trend also observed in community-driven initiatives analyzed by Shoaib (2022). Moreover, WTP has a moderate impact on immediate satisfaction (Ksd, 0.370), suggesting that financial contributions enhance residents' perceptions of tangible benefits from conservation projects. In the long run, WTP significantly influences perceptions of program sustainability (PGG, 0.749). Research by Banerjee & Mitra (2023) and Davidson (2022) emphasizes that higher contributions foster trust in the longevity of environmental programs, reinforcing the need for well-structured financial participation models. Overall, these insights highlight the importance of designing conservation programs that integrate socioeconomic considerations, educational outreach, and financial participation mechanisms to maximize effectiveness and long-term impact.

Overall Model Interpretation

The overall model interpretation highlights the intricate relationships between socioeconomic, ecological, and behavioral factors influencing WTP for environmental conservation. The latent variable, which integrates social, economic, and ecological

aspects, explains 52.9% of the variance in WTP (path coefficient = 0.529). This substantial explanatory power underscores the importance of considering multiple dimensions when assessing community support for conservation initiatives. It suggests that individuals' financial capability, educational background, and environmental awareness collectively shape their willingness to contribute to sustainability efforts.

Among socioeconomic indicators, income and education emerge as the strongest positive contributors to WTP, aligning with findings from Kim et al. (2022). This reinforces the idea that financial stability and environmental awareness are critical drivers of participation in conservation programs. Conversely, demographic variables such as age and residency length negatively influence WTP, indicating that older and long-term residents may require targeted outreach strategies to enhance their engagement. These findings highlight the need for differentiated approaches to encourage participation across diverse community segments.

From a policy perspective, these insights provide actionable recommendations for enhancing conservation funding and participation. Policymakers should leverage the positive effects of income and education by implementing tiered contribution models that cater to individuals with varying financial capabilities. Additionally, expanding educational campaigns can further strengthen environmental awareness and commitment to conservation efforts. Addressing ecological factors, such as perceptions of flood risk, could also serve as a motivator, as individuals who experience direct environmental threats may be more inclined to contribute. By integrating these strategies, conservation programs can achieve greater inclusivity, effectiveness, and long-term sustainability.

This research investigates the relationships between various socioeconomic, ecological, and outcome variables and their influence on WTP for environmental conservation. Using SmartPLS analysis, the following key insights were derived:

Socioeconomic Variables

The analysis of socioeconomic variables reveals significant relationships between income, education, and employment status with individuals' WTP for environmental conservation programs. Income demonstrates a strong positive effect on WTP, with a path coefficient of 0.647, indicating that individuals with higher financial capacity are more likely to contribute. This finding is consistent with research by Banerjee and Mitra (2023) and Cao & Zhang (2022), which emphasize that financial stability plays a crucial role in enabling active participation in environmental initiatives. Similarly, education exhibits an even stronger positive relationship with WTP, with a path coefficient of 0.771. Higher education levels enhance environmental awareness, fostering greater engagement in conservation efforts. This aligns with studies by Guila et al. (2023) and Shoaib (2022), which highlight the role of education in improving understanding, commitment, and proactive involvement in sustainability programs.

Employment status also plays a crucial role in shaping WTP, as individuals with stable employment tend to be more supportive of conservation initiatives. With a path coefficient of 0.533, employment stability positively influences financial contributions, suggesting that economic security enables individuals to allocate resources toward environmental causes. This finding is supported by Davidson (2022) and Finn & Darby (2022), who argue that individuals with stable incomes are more likely to engage in long-term financial commitments, including conservation funding.

Demographic factors, particularly age and length of residency, exhibit distinct patterns in their influence on WTP. Age has a negative relationship with WTP (path coefficient = -0.386), suggesting that younger individuals are more inclined to support conservation

initiatives compared to older residents. This trend is consistent with findings by Kim et al. (2022) and Rodriguez & Torres (2023), who indicate that younger populations are generally more motivated by long-term environmental sustainability goals. Additionally, length of residency demonstrates a weak negative effect on WTP, with a path coefficient of -0.103. This suggests that newer residents may be more willing to contribute to conservation efforts, potentially as a way to integrate into their communities and demonstrate social responsibility. Research by Tran & Bui (2023) and Ulrich & Peters (2023) further supports this notion, emphasizing the greater participation of newer community members in environmental initiatives.

Overall, these findings underscore the importance of socioeconomic and demographic factors in shaping individuals' willingness to support conservation efforts. They highlight the need for targeted strategies that consider income levels, education, employment stability, and demographic characteristics to enhance public engagement and financial contributions toward sustainability programs.

Ecological Variables

Ecological variables play a significant role in shaping residents' WTP for environmental conservation programs. One key factor is the perception of flood risk, which demonstrates a strong positive influence on WTP, with a path coefficient of 0.529. This suggests that individuals who frequently experience flooding are more inclined to contribute financially to conservation efforts. Their direct exposure to the risks and damages associated with flooding heightens their awareness of the need for effective environmental management. The findings align with research by Patel & Sharma (2023) and Vasquez & Mendez (2022), who observed that communities affected by environmental hazards tend to show greater support for initiatives aimed at risk reduction and mitigation.

Another critical ecological variable is the perceived environmental impact, which also shows a positive effect on WTP, with a path coefficient of 0.370. Residents who are more cognizant of the broader implications of environmental degradation demonstrate a higher willingness to engage in conservation activities. This heightened awareness fosters a sense of responsibility and urgency, motivating individuals to contribute toward sustainable solutions. Finn & Darby (2022) and Young & Liu (2023) support these findings, highlighting that an increased understanding of environmental issues correlates with greater participation in conservation programs.

Together, these insights underscore the importance of addressing ecological concerns within conservation initiatives. By emphasizing the direct benefits of mitigating environmental risks, such as flooding, and enhancing public awareness of the broader ecological impacts, policymakers can effectively boost community engagement and financial contributions. These findings highlight the need for targeted communication strategies that leverage residents' experiences with environmental hazards and promote a deeper understanding of conservation's long-term benefits.

Willingness to Pay (WTP)

WTP serves as a direct outcome of both socioeconomic and ecological factors, playing a crucial role in the success of environmental conservation programs. Studies by Kim et al. (2022) and Ogiemwonyi & Jan (2023) confirm that improvements in financial capacity, education, and environmental awareness significantly enhance individuals' willingness to contribute. This highlights the need for policies that strengthen these factors to maximize community participation and support for sustainability initiatives.

Beyond its determinants, WTP has meaningful implications for the perceived effectiveness and sustainability of conservation programs. One key outcome is direct satisfaction with these initiatives, as reflected in the strong positive relationship between WTP and residents' perception of program benefits (path coefficient = 0.775). Individuals who contribute financially tend to feel a greater sense of ownership and fulfillment, reinforcing their engagement with conservation efforts. This aligns with findings by Shoaib (2022) and Cao & Zhang (2022), who emphasize that financial participation enhances trust in environmental programs and fosters community commitment.

WTP also influences perceptions of long-term sustainability, with a path coefficient of 0.749, indicating that higher contributions correlate with a stronger belief in the program's ability to achieve lasting environmental goals. This suggests that when individuals invest in conservation, they are more confident in its continuity and effectiveness. Research by Banerjee & Mitra (2023) and Davidson (2022) supports this notion, emphasizing that sustained community financial engagement is critical for the long-term viability of environmental initiatives.

In the context of programs like Glintung Go Green, these insights are particularly relevant. The integration of digital tools has been shown to enhance engagement and reduce air pollution by 15% (Ahmad & Lin, 2023), while the implementation of green infrastructure improves flood management efficiency by 30% (Chen & Nakamura, 2023). Additionally, urban gardening has demonstrated significant socioeconomic benefits, reducing living costs by 20% for low-income households (Wang & Kumar, 2023). These findings underscore the interconnected nature of conservation, social equity, and sustainability, reinforcing the importance of fostering public participation to achieve long-term urban resilience.

CONCLUSION

The review highlights that WTP for community-based environmental initiatives is influenced by a complex interplay of socioeconomic, ecological, and demographic factors. Addressing these determinants enables policymakers and program designers to enhance community participation, improve satisfaction with program outcomes, and ensure the long-term sustainability of conservation efforts. The findings suggest that future research should explore the dynamic interactions among these factors, particularly in diverse urban settings, to refine strategies for fostering pro-environmental behaviors.

The results underscore the critical role of socioeconomic and ecological factors in shaping residents' WTP for conservation programs. Higher-income, education, and employment stability significantly contribute to WTP, as financial capacity and awareness drive engagement in sustainability initiatives. Demographic factors also play a key role, with younger and newer residents exhibiting a greater willingness to contribute, suggesting the need for targeted outreach to older and long-term community members. Additionally, ecological awareness, particularly in relation to flood risk perception and environmental impact, serves as a strong motivator for financial contributions.

A high WTP is closely linked to immediate satisfaction with conservation efforts and positive perceptions of long-term program sustainability. This indicates the potential for fostering community ownership and ensuring continued support for environmental initiatives. These insights provide a valuable foundation for policymakers in designing conservation programs that maximize community participation and long-term viability. Future strategies should prioritize improving socioeconomic conditions and strengthening ecological awareness to further enhance WTP and the overall success of conservation initiatives.

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