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Article

Intervention Model to Improve Community Knowledge, Attitudes, and Behavior on Ecotourism Accessibility for People with Disabilities

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Abstract: This study aims to evaluate the impact of the Intervention Model on improving community knowledge, attitudes, and behavior related to ecotourism accessibility for people with disabilities in Ternate City, with a focus on addressing gaps in understanding and support through educational services and distribution of educational materials in the form of brochures with a participatory approach. The research design used a quasi-experiment involving 4,964 residents, where 287 participants were randomly selected through Cluster Random Sampling. Three tourist destinations were chosen as research locations, namely Sulamadaha Beach, Tolire Besar Lake, and Batu Angus Geotourism in Ternate City, North Maluku. The results showed that the intervention significantly improved community knowledge, attitudes, and behavior related to ecotourism accessibility, with a significance value (Sig. (2-tailed) of $0.000 < \alpha = 0.05$) indicating a significant difference between the experimental group and the control group after community-based interventions were carried out. In conclusion, this model has been proven effective in improving community knowledge, attitudes, and behavior towards ecotourism accessibility and can be used as a reference for similar programs in other locations to improve ecotourism accessibility globally.

Keywords: policy intervention model; ecotourism accessibility; knowledge; attitude; community behavior

Introduction

Accessibility for people with disabilities in ecotourism is an essential element in (Sandra Wall-Reinius, et al, 2023). Providing equal access to ecotourism destinations and activities is not only based on social justice, but also a strategic step to create an inclusive tourism experience (David A. Fennell and Brian Garrod, 2022). Integration of accessibility into infrastructure, services, and information is essential for people with disabilities to fully participate (David A. Fennell and Brian Garrod., 2023). This commitment reflects social responsibility and creates fair opportunities in the tourism sector (Ewnetu, et al, 2019), and is the basis for sustainable tourism development (Thowayeb H. et al., 2020).

Providing inclusive facilities, services, and information requires various measures, such as wheelchair ramps, accessible pedestrian paths, Braille signage (Badawy, et al, 2020), and audio guides (Azmi, et al, 2023). These adaptations eliminate physical and informational barriers that hinder the participation of people with disabilities in ecotourism (Celeste Eusébio, et al, 2023). In addition to improving the tourism experience for all visitors (Edgardo Sica, et al, 2021), accessibility is essential in ecotourism planning for long-term sustainability (Bakhsh, et al, 2023). Inclusive destinations attract more tourists, increase global competitiveness, and have positive impacts on local communities (Mark Chris M. Lapuz, 2023), including increased income (Mohammad Nematpour, et al, 2024), and job creation (Heru, et al, 2023).

Improving accessibility in ecotourism is not only an ethical imperative, but also a strategic advantage for tourism destinations. By implementing accessibility in tourism policies, destinations can create inclusive, sustainable tourism (Kukreti, et al, 2023), and encompass social justice, cultural preservation, and environmental management (Dawson, et al, 2023). However, challenges such as limited access (Trinidad Domínguez Vila, et al, 2024), low awareness (Aliyu Mohammed Tata, et al, 2024), and lack of government commitment (Cheryl Cockburn-Wooten, et al, 2018) remain. Collaboration between government, private sector, and non-governmental organizations is key to improving the inclusiveness and accessibility of tourism for all parties (Wondirad, et al, 2020).

Tourism for people with disabilities is still hampered by the lack of regulations and accessibility of facilities. More attention is needed on infrastructure that supports their inclusion (Kastenholz, et al, 2018). People with disabilities overcome barriers through personal strategies and organizational support, playing a vital role in promoting inclusive destinations and creating new business opportunities (Yi Chao, et al, 2024). In addition to making economic contributions,

they also fight for their rights and equality in society (Simon Darcy,*et,al*, 2020). People with disabilities often face barriers in accessing tourism, such as physical limitations, lack of information, and services that do not meet their needs. Although Law Number 10 of 2009 guarantees their rights, the implementation of Disability-Friendly Tourism in Indonesia is still limited, although in line with the 2015-2030 SDGs agenda (Fitri Fadhilah Sumiars,*et,al*, 2022).

Accommodating the needs of people with disabilities in tourism development is very important, considering the global population of people with disabilities reaching more than 1 billion people, with a large market potential (Vila,*et,al*, 2017). Data on people with disabilities in Indonesia is around 9.7% of the population in 2019, equivalent to 26 million people (TEMPO.CO., 2023). In North Maluku, there were 7,162 people with disabilities in 2020 (TimesIndonesia.co.id, 2022), and in Ternate City 1,450 people in 2021, indicating significant tourism market potential (Brindonews.com, 2022), indicating their significant potential in the tourism market.

As an ecotourism destination, Ternate City is proactive in increasing inclusivity with accessibility policies for people with disabilities and supporting sustainable tourism. This study evaluates the impact of policies on the community, emphasizes the importance of accessibility awareness, and encourages improvements in policies and community education programs to create comfortable, sustainable tourism and improve the economic and social welfare of the community.

Method

This study used a quasi-experimental design, a development of the true experimental design. Quasi-design has a control group but does not fully control external variables. The research pattern used is a nonequivalent control group design, with two groups of subjects, namely the experimental group and the control group, each receiving treatment with a different intervention method (Kuras Purba, 2023). The purpose of this study was to evaluate the impact of the policy model on community knowledge, attitudes, and behavior regarding the accessibility of ecotourism for people with disabilities in Ternate City. This study was conducted from January to June 2024 in three different sub-districts which are the main tourist locations in Ternate City, North Maluku Province, Indonesia, namely Sulamadaha Beach in Sulamadaha Village, Tolire Besar Lake in Takome Village, and Batu Angus Geotourism in Kulaba Village. These locations are the main destinations in Ternate City and have never been the object of previous research, especially regarding the accessibility of ecotourism for people with disabilities. The study population included residents from three sub-districts: Sulamadaha (1926 people), Takome (1146 people), and Kulaba (1892 people), with a total population of 4964 people (BPS Kota Ternate, 2023). This study has obtained ethical eligibility from the Health Research Ethics Commission of Dr. Moewardi Hospital with ethical eligibility number: 2.355 / XII / HREC / 2023. In this study, the probability sampling method was applied which gave each member of the population an equal opportunity to be selected as a sample. The technique used was Cluster Random Sampling, where the population was divided into several groups (clusters), several clusters were selected randomly, and all members in the selected cluster were taken as samples with the Cluster Random Sampling Formula:

$$n = \frac{(N * n_c)}{(N_c)}$$

$$\text{Sulamadaha Subdistrict } 10\% \times 1926 = 0,1 \times 1926 = 193$$

$$n = \frac{1926 \times 193}{3} = 124$$

$$\text{Takome Subdistrict } 10\% \times 1146 = 0,1 \times 1146 = 115$$

$$n = \frac{1146 \times 115}{3} = 44$$

$$\text{Kulaba Subdistrict } 10\% \times 1892 = 0,1 \times 1892 = 189$$

$$n = \frac{1892 \times 189}{3} = 119$$

With this method, the number of targeted samples is 287 people, or 10% of the population in each sub-district. while the number "3" describes the number of sub-districts involved in this study. The research instrument is a questionnaire to collect data systematically. Data analysis involves univariate, bivariate analysis (with paired t-Test and p-value <0.05), and multivariate (using multiple linear regression to evaluate the influence of independent variables with p <0.05 and p <0.025 (Sugiyono, 2022).

Results

Analisis Data Des Deskriptif

Community Knowledge

The results of the descriptive statistical analysis of the policy model to increase public knowledge about ecotourism accessibility for people with disabilities, both for the experimental and control groups, are presented in the following table:

Table 1. Descriptive Statistics Test Results.

Knowledge	N	Descriptive Statistical Analysis				
		Minimum	Maximum	Mean	Std. Deviation	Variance
Experimental Group Pre-test	144	50	69	60.08	3.702	13.707
Experiment Group Post-test	144	50	69	61.37	3.534	12.486
Control Group Pretest	143	50	69	58.98	3.834	14.697
Control Group Posttest	143	50	69	59.78	4.088	16.71

Based on the descriptive statistical analysis table, the experimental group had an average knowledge of ecotourism accessibility for people with disabilities of 60.08 before the intervention, with a standard deviation of 3.702 and a variance of 13.707. After the intervention, the average knowledge increased to 61.37. In contrast, the control group had an average knowledge of 58.98 before the intervention, with a standard deviation of 3.834 and a variance of 14.697, which then increased to 59.78 after the intervention.

Community Attitude

The results of the descriptive statistical analysis of the policy model implemented through interventions to improve community attitudes towards ecotourism accessibility for people with disabilities, both in the experimental and control groups, are presented in the following table.

Table 2. Descriptive Statistics Test Results.

Attitude	N	Descriptive Statistical Analysis				
		Minimum	Maximum	Mean	Std. Deviation	Variance
Experimental Group Pre-test	144	31	48	39.96	3.12	9.733
Experiment Group Post-test	144	35	49	41.5	2.957	8.741
Control Group Pretest	143	33	46	39.83	2.758	7.605
Control Group Posttest	143	34	47	40.29	2.874	8.262

According to the descriptive statistical analysis, the experimental group had an average community attitude towards accessibility of ecotourism for people with disabilities of 39.96 before the intervention, with a standard deviation of 3.120 and a variance of 9.733. After the intervention, the average increased significantly to 41.50. While in the control group, the average attitude before the intervention was 39.83, with a standard deviation of 2.758 and a variance of 7.605, which then increased to 40.29 after the intervention.

Community Behavior

The results of the descriptive statistical analysis of the policy model implemented through interventions to improve community behavior related to ecotourism accessibility for people with disabilities, both in the experimental and control groups, are presented in the following table.

Table 3. Descriptive Statistics Test Results.

Behavior	N	Descriptive Statistical Analysis				
		Minimum	Maximum	Mean	Std. Deviation	Variance
Experimental Group Pre-test	144	33	47	40.35	2.807	7.879
Experiment Group Post-test	144	34	49	42.06	3.32	11.024
Control Group Pretest	143	33	48	40.37	2.78	7.728
Control Group Posttest	143	34	49	40.59	2.844	8.088

Based on the results of descriptive statistical analysis, the experimental group had an average community behavior towards ecotourism accessibility for people with disabilities of 40.35 before the intervention, with a standard deviation of 2.807 and a variance of 7.879. After the intervention, the average behavior increased significantly to 42.06. Meanwhile, the control group showed an average behavior of 40.37 before the intervention, with a standard deviation of 2.780 and a variance of 7.728, which then increased to 40.59 after the intervention.

Independent Sample Test

Community Knowledge

The results of the Independent Sample T-Test on the application of the policy model through interventions to improve public knowledge regarding ecotourism accessibility for people with disabilities, in the experimental group and control group, are shown in the following table.

Table 4. Results of Independent Sample T-Test.

	Independent Samples Test										
	Levene's Test for Equality of Variances				t-test for Equality of Means						
	F		Sig.		T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
										Lower	Upper
Knowledge	Equal variances assumed	2.429	.120	3.530	285	.000	1.592	.451	.704	2.479	
	Equal variances not assumed			3.528	278.597	.000	1.592	.451	.704	2.480	

Based on the results above, the Sig. Levene's Test for Equality of Variances value of 0.120 > 0.05 indicates that the data variance between the posttest of the experimental group and the control group is homogeneous. Therefore, the interpretation of the Independent Samples Test table uses the Equal variances assumption. The Sig. (2-tailed) value of

$0.000 < 0.05$ indicates that H_0 is rejected and H_a is accepted, which means that there is a significant difference between the average knowledge of the community in the posttest of the experimental and control groups. The Mean Difference value of 1.592 indicates that there is a difference in the average knowledge of the community. The calculated t value of $3.530 > t$ table of 1.968, so H_0 is rejected and H_a is accepted. This indicates that the policy model through intervention has an effect on increasing community knowledge in increasing ecotourism accessibility for people with disabilities

Community Attitude

Hasil Uji Independent Sample T-Test terkait model kebijakan melalui intervensi untuk meningkatkan sikap masyarakat terhadap aksesibilitas ekowisata bagi penyandang disabilitas pada kelompok eksperimen dan kelompok kontrol disajikan dalam tabel berikut.

Table 5. Hasil Uji T Sampel Independen.

		Independent Samples Test								
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2- tailed)	Mean Dif- ference	Std. Error Difference	95% Confidence In- terval of the Differ- ence	
								Lower	Upper	
Attitude	Equal vari- ances as- sumed	.172	.679	3.524	285	.000	1.213	.344	.536	1.891
	Equal vari- ances not assumed			3.525	284.872	.000	1.213	.344	.536	1.891

Based on the results above, the Sig. value in the Levene's Test for Equality of Variances of $0.679 > 0.05$ indicates that the data variance between the Experimental Group Posttest and the Control Group Posttest is homogeneous. Thus, the interpretation of the Independent Samples Test results table is based on the values contained in the table with the assumption of Equal variances. The Sig. value (2-tailed) of $0.000 < 0.05$ indicates a significant difference between the average public attitude in the Experimental Group post-test and the Control Group post-test. From the results table, a Mean Difference value of 1.213 was obtained, indicating a difference in the average public attitude between the two groups. With a calculated t value of $3.524 > t$ table of 1.968, H_0 is rejected and H_a is accepted. This indicates that the Policy Model through intervention influences public attitudes in increasing ecotourism accessibility for people with disabilities.

Community Behavior

The results of the Independent Sample T-Test on the policy model through interventions to improve community behavior towards ecotourism accessibility for people with disabilities in the experimental group and control group are shown in the following table.

Table 6. Independent Sample T-Test Results.

		Independent Samples Test									
		Levene's Test for Equality of Variances			t-test for Equality of Means					95% Confidence In- terval of the Differ- ence	
		F	Sig.	T	df	Sig. (2- tailed)	Mean Dif- ference	Std. Error Difference	Lower	Upper	
Behavior	Equal vari- ances as- sumed	3.534	.061	4.022	285	.000	1.468	.365	.750	2.187	
	Equal vari- ances not assumed			4.024	278.994	.000	1.468	.365	.750	2.186	

Based on the results above, the Sig. value of Levene's Test Equality of Variances of $0.061 > 0.05$ indicates that the data variance between the Experimental Group Posttest and the Control Group Posttest is homogeneous. Thus, the interpretation of the Independent Samples Test results table follows the value in the Equal variances assumed table. Based on the Independent Samples Test table, the Sig. value (2-tailed) is $0.000 < 0.05$, so H_0 is rejected and H_a is accepted. This indicates a significant difference between the average behavior of the community in the Experimental Group Posttest and the Control Group Posttest. From the results table, the Mean Difference value is 1.468, which indicates a difference in community behavior between the two groups. The positive t-count value of 4.022 indicates that the average behavior of the community in the Experimental Group Posttest is higher than the average in the Control Group Posttest. Because the t-count value of $4.022 > t$ table of 1.968, H_0 is rejected and H_a is accepted. This shows that there is a difference in the average behavior of the community between the post-test of the Experimental Group and the post-test of the Control Group, which indicates that the Policy Model through intervention has an influence on community behavior in increasing the accessibility of ecotourism for people with disabilities.

Discussion

Community Knowledge

Community knowledge about accessibility of ecotourism for people with disabilities increased significantly after the community-based intervention. The intervention included educational activities, as well as distribution of educational materials such as brochures. This approach succeeded in providing the community with more in-depth information about the importance of accessibility in ecotourism destinations for people with disabilities. In contrast, the control group that did not receive the intervention showed minimal changes in their knowledge, confirming the effectiveness of the intervention model used.

According to the theory of knowledge, knowledge is the result of the accumulation of information obtained by individuals through experience, social interaction, and education. Kolb (1984) through Experiential Learning Theory (ELT) emphasized that the learning process consists of four stages: concrete experience, reflection, conceptualization, and active experimentation. In the context of this study, the community-based intervention model provides concrete experiences to the community regarding accessibility issues, encourages them to reflect on the challenges faced by people with disabilities, and produces a deeper conceptual understanding.

This intervention process provides an opportunity for the community to interact directly with new information through various activities such as education and distribution of educational materials in the form of brochures. These activities facilitate active and collaborative learning, which strengthens the community's understanding of the importance of accessibility for people with disabilities in the context of ecotourism. This increase in knowledge can be seen from the results of statistical tests, where significant differences were found between the experimental and control groups. With a Sig. (2-tailed) value of 0.001, $0.000 < (\alpha = 0.05)$ and a calculated t value $< t$ table value ($3.524 > 1.968$), the null hypothesis (H_0) is rejected and the alternative hypothesis (H_a) is accepted, indicating a significant difference

between community knowledge in the experimental and control groups after the intervention. This participatory approach has succeeded in increasing community knowledge about ecotourism accessibility.

Public policy theory, as stated by Kingdon (1995), states that the success of a policy is influenced by three main elements: attention to the problem, appropriate solutions, and political support (Nihit Goyal & Michael Howlett, 2024). In the context of ecotourism accessibility, policies that support people with disabilities must meet these three elements. Community-based interventions that directly involve the community show that these policies provide concrete solutions to accessibility problems, while gaining broad support from the community that has received education through the intervention program.

This study also supports the view of (Syamsu Rijal, 2023), who asserted that public policies that involve community participation have a greater chance of success, because the community feels ownership of the policy. In other words, when the community is given the opportunity to understand and play an active role in policies that support accessibility, they will be more likely to support its implementation and preservation.

The results of this study show that the intervention policy model implemented has succeeded in significantly increasing community knowledge about ecotourism accessibility. Communities in the experimental group showed a much better understanding and awareness of accessibility issues for people with disabilities. Distribution of educational materials, outreach, and awareness campaigns played a major role in creating a deeper collective awareness of the importance of inclusive ecotourism.

In contrast, the control group did not experience a significant increase in knowledge, indicating the importance of community-based interventions as an effective tool for disseminating new knowledge to the community. This is in line with research by (Jordan D Herbison, et al, 2023), which shows that integrated education and outreach programs can improve community understanding of social issues, including accessibility for people with disabilities.

The findings of this study provide a strong basis for the implementation of a policy model that supports efforts to increase community knowledge and participation regarding accessibility of ecotourism for people with disabilities. Community-based policies that involve active community participation not only increase their knowledge but also empower them to become agents of change in creating a more inclusive tourism environment. This is relevant to research by (Stephan Hügel & Anna R. Davies, 2020), which shows that community participation plays an important role in ensuring the successful implementation of accessibility policies.

In a broader context, the implementation of this policy model is expected to be the first step towards developing more inclusive and sustainable tourism, which accommodates the needs of all visitors without exception. With better knowledge, it is hoped that the community will be more supportive of policies that support social inclusion, and engage in joint efforts to create ecotourism destinations that are friendly to the disabled.

Community Attitude

Community attitudes towards accessibility of ecotourism for people with disabilities showed significant differences between the experimental and control groups. In the experimental group, community-based interventions that included educational activities and distribution of educational materials such as brochures, succeeded in increasing positive community attitudes towards inclusion and accessibility in the tourism sector. This finding is in line with previous research, which shows that community-based interventions and educational programs can significantly change community attitudes, especially towards social issues such as accessibility. In contrast, the control group that did not receive similar interventions did not show significant changes in attitudes. This group still maintained general or limited views on the importance of ecotourism accessibility.

The results of the statistical analysis showed a significant difference, with a value (Sig.) (2-tailed) of $0.001 < (\alpha = 0.05)$ and a calculated t value $>$ t table value ($3.524 > 1.968$), so that the null hypothesis (H_0) was rejected and the alternative hypothesis (H_a) was accepted. This confirms that the participatory approach applied in community-based interventions is effective in influencing community attitudes.

Attitude theory explains that a person's attitude is formed through a cognitive process involving evaluation of experiences, information, and social interactions. According to the Theory of Planned Behavior developed by Ajzen (1991), a person's attitude toward a particular behavior is influenced by their beliefs about the outcomes of that behavior, as well as the social norms that apply in their environment (Andrius Niaura, 2013). In this context, community-based interventions provide relevant information and reinforce social norms that support inclusion, which in turn influences community attitudes toward ecotourism accessibility.

Kolb (1984) also through Experiential Learning Theory (ELT) emphasized that learning involving direct experience can change individual attitudes and perceptions (Sidrah Ilyas, et al, 2020). In this study, community-based interventions provide opportunities for the community to be actively involved in educational and socialization activities, so that they

can directly understand the challenges faced by people with disabilities in accessing tourist destinations. This experience creates a deeper understanding and forms a more positive attitude towards inclusion and accessibility.

Previous research supports this view. (Magreth Matonya, 2016) found that integrated educational programs involving the community can shape more positive attitudes towards accessibility for people with disabilities. Such programs not only provide new knowledge but also influence the way people think, creating stronger inclusive attitudes towards social issues such as accessibility in the tourism sector.

Intervention policy models play an important role in the process of changing community attitudes. (McConnell, 2018), explains that public policies designed to involve the community can produce sustainable changes in attitudes and behavior. In the context of this study, the community-based intervention policy model provides information, education, and awareness to the community regarding the importance of ecotourism accessibility. Through a participatory approach, the community not only becomes the recipient of information, but also plays an active role in understanding accessibility issues and creating a more inclusive environment

Research by (Michael B. Duignan & Alan Fyakk, 2023), also shows that progressive policies in the tourism sector that emphasize inclusion can influence community attitudes towards accessibility. Community-based interventions provide the foundation for implementing more inclusive policies, where communities are involved in the decision-making process related to ecotourism accessibility. Thus, policies designed to increase community awareness and knowledge about accessibility have the potential to positively change their attitudes, ultimately supporting inclusive goals in the tourism sector.

The theory of community empowerment is also relevant in this context. According to of (Michael B. Duignan, *et,al*, 2023), policies that prioritize accessibility and inclusion can change community perceptions and create a friendly environment for people with disabilities. Policies that are designed by actively involving the community not only expand their knowledge but also empower them to support inclusion in tourism. The interventions carried out in this study were not only successful in increasing community knowledge but also changing their attitudes, creating an environment that is more open to the needs of people with disabilities.

The community empowerment that occurs through this intervention allows for the creation of stronger inclusive attitudes, as people become more aware of their role in creating change. This is in line with the findings of (Gianfranco Giuntolli, *et,al*, 2024) Kemp & Collings (2018), which state that inclusive policies that involve communities can produce more sustainable changes in attitudes and behavior.

Community-based interventions that include educational activities and distribution of educational materials have proven effective in improving community attitudes towards ecotourism accessibility. Through a participatory approach, communities not only receive new information, but also interact directly with the issues faced by people with disabilities. This creates a significant change in attitudes, where communities become more supportive of efforts to create inclusive tourism destinations.

These findings provide strong evidence that community-based interventions can be an effective tool in changing community attitudes towards accessibility. In addition, public policies that support community participation in decision-making processes related to accessibility can have a positive impact on community perceptions and attitudes, as supported by previous research. This intervention policy model also strengthens the theory of community empowerment, where active community involvement is key to creating an inclusive and friendly environment for people with disabilities.

Community Behavior

Community behavior related to accessibility of ecotourism for people with disabilities can be analyzed through community-based interventions that include educational activities and distribution of educational materials such as brochures. The participatory approach in this intervention has proven effective in improving community behavior. In this study, the experimental group that received the intervention showed significant behavioral changes compared to the control group that did not receive the intervention.

The results of the statistical analysis showed a Sig. value of $0.000 < (\alpha = 0.05)$ and a calculated t value $< t$ table value $(4.022 > 1.968)$. Thus, the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_a) is accepted, indicating that this participatory approach is a successful strategy in creating a more inclusive ecotourism environment. This finding is in line with previous studies, indicating that community-based interventions are effective in encouraging changes in community behavior related to ecotourism accessibility.

Interventions in the experimental group not only increased knowledge, but also motivated the community to act more inclusively. In contrast, the control group did not show significant behavioral changes, which could be due to limited levels of awareness and experience. This strengthens the argument that active interventions are essential to changing community behavior.

To understand behavioral change, the Theory of Planned Behavior (TPB) by Ajzen (1991) is a relevant framework. TPB states that the intention to behave is influenced by three main factors: attitudes toward behavior, subjective norms, and perceived behavioral control (Oliver Alexander Gansser & Christina Stefanie Reich, 2023). In the context of this study, community-based interventions serve to strengthen positive attitudes toward inclusion, create social norms that support accessibility, and increase the perception of community control to engage in inclusive behavior. Through educational services, communities gained new knowledge about the importance of accessibility, which strengthened their attitudes, while the distribution of educational materials such as brochures strengthened the community's perception that they had control to make real changes. The combination of these factors resulted in a strong intention to behave inclusively, which was reflected in significant behavioral changes in the experimental group.

Previous research supports the effectiveness of community-based interventions in influencing community behavior. (Tawanda Makuyana & Engelina du Plessis, 2022), found that integrated education programs in the tourism sector significantly increased community inclusive behavior towards people with disabilities. This study suggests that progressive regulations and programs that directly involve the community are essential in creating a more inclusive tourism environment.

(Zhang et al., 2020), also emphasized the importance of involvement in social activities in changing community perceptions and behaviors. Their study showed that active participation in disability awareness programs increased community proactive actions in supporting accessibility for people with disabilities. This finding is in line with the results of the current study, where a participatory approach through community-based interventions has been proven to be successful in changing community behavior regarding ecotourism accessibility.

Intervention policy models also play an important role in facilitating changes in community behavior. According to McConnell (2010), policies that involve community participation in their formulation and implementation are more effective in changing behavior (Shafaq Masud & Ahmad Khan., 2024). In this study, community-based intervention is a form of policy that aims to increase awareness and inclusive behavior through a participatory approach.

Policies that facilitate education and direct community engagement on accessibility issues create opportunities for communities to act more inclusively. Thus, community behavior is not only influenced by top-down interventions, but also by their active participation in the education and socialization process. Research by (Yunlai Zhang , *et,al*, 2023), strengthens the argument that policies designed to increase participation of people with disabilities in tourism can significantly change community behavior.

(Kaylyn Levine & Alex Karner, 2023) also support the importance of inclusive accessibility policies. They emphasize that public policies that focus on social inclusion can have a significant impact on people's behavior and views. This is in line with the findings of this study, where community-based policy interventions have succeeded in creating a more inclusive environment for people with disabilities in the tourism sector.

This study emphasizes the importance of public policies that involve community participation in creating sustainable behavioral change and provides a strong foundation for designing more inclusive policies and programs in the context of ecotourism, while emphasizing the importance of community involvement in creating a tourism environment that is friendly to all individuals, including people with disabilities.

This study shows that community-based interventions that include educational activities and distribution of educational materials such as brochures are effective in improving community behavior related to ecotourism accessibility. Through a participatory approach, communities are encouraged to act more inclusively, supporting efforts to improve accessibility for people with disabilities.

Support from behavioral theories such as the Theory of Planned Behavior by Ajzen (1991) provides a strong basis for understanding how community-based interventions can influence people's intentions and behaviors (Christina Myers, *et,al*, 2020). This study also shows the importance of public policies designed with community participation to create sustainable behavioral change.

The results of this study provide a strong foundation for designing more inclusive policies and programs in the context of ecotourism, and emphasize the importance of community involvement in creating a tourism environment that is friendly to all individuals, including people with disabilities.

Conclusions

Community Knowledge

The results of the statistical analysis of the Independent sample t Test, where a significant difference was found between the experimental group and the control group, with a Sig. (2-tailed) value of 0.001, $0.000 < (\alpha = 0.05)$ and a calculated t value $< t_{table} \text{ value } (3.524 > 1.968)$, the null hypothesis (H_0) is rejected and the alternative hypothesis (H_a) is accepted, meaning that there is a significant influence between community knowledge in the experimental group and

the control group after community-based interventions through educational services and distribution of educational materials in the form of brochures with a participatory approach on ecotourism accessibility for people with disabilities.

Community Attitudes

The results of the statistical analysis of the Independent sample t Test, showed a significant difference, with a value (Sig.) (2-tailed) of $0.001 < (\alpha = 0.05)$ and a calculated t value $< t \text{ table value } (3.524 > 1.968)$, so that the null hypothesis (H_0) is rejected and the alternative hypothesis (H_a) is accepted. This means that there is a significant influence between the attitudes of the community in the experimental group and the control group after community-based interventions through educational services and distribution of educational materials in the form of brochures with a participatory approach on ecotourism accessibility for people with disabilities.

Community Behavior

The results of the statistical analysis of the Independent sample t Test, showed a significant difference, with Sig. values of $0.000 < (\alpha = 0.05)$ and the calculated t value $< t \text{ table value } (4.022 > 1.968)$. Thus, the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_a) is accepted. This means that there is a significant influence between the behavior of the community in the experimental group and the control group after community-based interventions through educational services and distribution of educational materials in the form of brochures with a participatory approach on ecotourism accessibility for people with disabilities.

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References

- Aliyu Mohammed Tata, M. E. and C. F. (2024). "Exploring Airport Navigation Challenges Faced By." *International Journal of Aviation, Aeronautics, and Aerospace*, 11(1). <https://doi.org/10.58940/2374-6793.1871>
- Andrius Niaura. (2013). Using the Theory of Planned Behavior to Investigate the Determinants of Environmental Behavior among Youth. *Environmental Research, Engineering and Management*, 63(1), 74–81. <https://doi.org/10.5755/fj01.erem.63.1.2901>
- Azmi, Nur Ainaa, Haryati Mohd Isa, O. M. N. and W. P. U. (2023). Key Accessibilities Issues (KAIs) for People with Disabilities (PwDs) at Electric Train Service (ETS) Station. *International Journal of Sustainable Construction Engineering and Technology*, 3(14), 353–365.
- Badawy, U. I. (2020). Adaptation of accessibility for people with disabilities in private and public buildings using appropriate design checklist. *International Journal for Modern Trends in Science and Technology*, 6(6), 9–20.
- Bakhsh, Qadar, Baloch Syed, Naseeb Shah, Nadeem Iqbal, Muhammad Sheeraz, and M. A. (2023). Impact of tourism development upon environmental sustainability : a suggested framework for sustainable ecotourism. *Environmental Science and Pollution Research*, 5917–5930. <https://doi.org/10.1007/s11356-022-22496-w>
- Brindonews.com. (2022). Pemutahiran Data Jumlah Penyandang Disabilitas Tahun 2021. <https://www.brindonews.com/2022/12/Disabilitas-Di-Kota-Ternate-1405-Orang.Html.Diakses.Pada.Tanggal.21.Desember.2022>.
- Celeste Eusébio, Leonor Teixeira, Pedro Teixeira, Maria João Caneiro, D. L. & A. S. (2023). The State of Web Accessibility for tourists with disabilities: a comparative study between different tourism supply agents Celeste. *Disability and Rehabilitation: Assistive Technology*, 18(17–29), 1–13. <https://doi.org/10.1080/17483107.2021.1941313>
- Cheryl Cockburn-Wootten, Alison J. McIntosh, K. S. & S. J. (2018). Communicating across tourism silos for inclusive sustainable partnerships. *Journal of Sustainable Tourism*, 26(9), 1483–1498. <https://doi.org/10.1080/09669582.2018.1476519>
- Christina Myers, Antonio Garcia, Rinad Beidas, X. T. & Z. Y. (2020). A Theory of Planned Behavior Exploration of Child Welfare Caseworker Referrals to an Evidence-Based Parenting Program. *Journal of Social Service Research*, 46(6), 877–889. <https://doi.org/10.1080/01488376.2019.1705458>

- David A. Fennell and Brian Garrod. (2023). Strategic approaches to accessible ecotourism: small steps, the domino effect and not paving paradise. *Journal of Sustainable Tourism*, 31(3), 760–777.
- David A. Fennell and Brian Garrod. (2022). Seeking a deeper level of responsibility for inclusive (eco) tourism duty and the pinnacle of practice (eco) tourism duty and the pinnacle of practice. *Journal of Sustainable Tourism*, 30(6), 1403–1422. <https://doi.org/10.1080/09669582.2021.1951278>
- Dawson, Neil, William Douglas Carvalho, Jakelyne S Bezerra, Felipe Todeschini, Marcelo Tabarelli, Karen Mustin, and N. D. (2023). Protected areas and the neglected contribution of Indigenous Peoples and local communities : Struggles for environmental justice in the Caatinga dry forest. *People Nature*, October 2021, 1739–1755. <https://doi.org/10.1002/pan3.10288>
- Edgardo Sica, Roberta Sisto, P. B. and G. C. (2021). *Inclusivity and Responsible Tourism : Designing a Trademark for a National Park Area*. 1–11.
- Ewnetu, A. W. and B. (2019). Policy Community participation in tourism development as a tool to foster sustainable land and resource use practices in a national park milieu. *Land Use Policy Journal*, 88(November), 104155.
- Fitri Fadhilah Sumiars, K. and E. N. (2022). Aksesibilitas Bagi Wisatawan Penyandang Disabilitas di Museum KAA Bandung. *Jurnal Ilmiah Wahana Pendidikan*, 8(13), 128–139.
- Gianfranco Giuntolli, Jan Idlle, Christy Newman, Karen R. Fisher, Y. E. & S. R. (2024). Towards a More Inclusive Society: A Scoping Review of Interventions and Policies for Changing Attitudes Towards People with Disability. *Scandinavian Journal of Disability Research*, 26(1), 315–334. <https://doi.org/10.16993/sjdr.1084>
- Heru, Mochamad, Riza Chakim, Po Abas Sunarya, and V. A. (2023). Village Tourism Empowerment Against Innovation , Economy Creative , and Social Environmental. *Aptisi Transactions on Technopreneurship (ATT)*, 5(2), 162–174.
- Jordan D Herbison, Meaghan Osborne, Jessica Andersen, Pierre Lepage, Véronique Pagé, Caroline Levasseur, Mélissa Beckers, Heather L Gainforth, M.-E. L. & S. N. S. (2023). Strategies to improve access to physical activity opportunities for people with physical disabilities. *Translational Behavioral Medicine*, 13(7), 486–500. <https://doi.org/https://doi.org/10.1093/tbm/ibac119>
- Kastenholz, E. D. & E. (2018). Accessible tourism experiences : the voice of people with visual disabilities visual disabilities. *Journal of Policy Research in Tourism, Leisure and Events*, 10(3), 265–285. <https://doi.org/10.1080/19407963.2018.1470183>
- Kaylyn Levine & Alex Karner. (2023). “Approaching Accessibility : Four Opportunities to Address the Needs of Disabled People in Transportation Planning in the United States.” *Transport Policy* 131(May 2022): 66–74. <https://doi.org/10.1016/j.tranpol.2022.12.012>.
- Kukreti, N. K. and P. (2023). Tourism as an Economic Engine Exploring the growth and Challenges in Uttarakhand. *International Journal of Hospitality, Management and Sciences*, 1(2), 63–74.
- Kuras Purba. (2023). *Penelitian dan Pengembangan, Penerbit. Yrama Widya, Cetakan Pertama. Bandung.*
- Magreth Matonya. (2016). Accessibility and Participation in Tanzanian Higher Education from the Perspectives of Women with Disabilities. In *Jyväskylä Studies in Education, Psychology and Social Research* (Vol. 568).
- Mark Chris M. Lapuz. (2023). Technology in Society The role of local community empowerment in the digital transformation of rural tourism development in the Philippines. *Technology in Society*, 74(July), 102308. <https://doi.org/10.1016/j.techsoc.2023.102308>
- McConnell, A. (2018). Hidden agendas: Shining a light on the dark side of public policy. *Journal of European Public Policy*, 25(12), 1739–1758. <https://doi.org/10.1080/13501763.2017.1382555>
- Michael B. Duignan, Ian Brittain, Marcus Hansen, A. F., & Page., S. G. and S. (2023). “Leveraging Accessible Tourism Development through Mega-Events , and the Disability-Attitude Gap.” *Tourism Management* 99(July 2022): 104766. <https://doi.org/10.1016/j.tourman.2023.104766>.
- Michael B. Duignan & Alan Fyakk. (2023). Promoting Accessible Tourism at Mega-Events: Bridging the Disability-attitude Gap. *Rosen Research Review*, 4(2), 6–9.
- Mohammad Nematpour, Masood Khodadadi, Sarasadat Makian, and M. G. (2024). EXPLORING AIRPORT NAVIGATION CHALLENGES FACED BY. *International Journal of Aviation, Aeronautics, and Aerospace Volume*, 11(1). <https://doi.org/10.58940/2374-6793.1871>
- Nihit Goyal & Michael Howlett. (2024). Types of learning and varieties of innovation: how does policy learning enable policy innovation? *Policy & Politics*, XX(Xx), 1–22. <https://doi.org/10.1332/030557321x16841388707452>
- Oliver Alexander Gansser & Christina Stefanie Reich. (2023). Influence of the New Ecological Paradigm (NEP) and environmental concerns on pro-environmental behavioral intention based on the Theory of Planned Behavior (TPB). *Journal of Cleaner Production*, 382(October 2022), 134629. <https://doi.org/10.1016/j.jclepro.2022.134629>
- Sandra Wall-Reinius, K. G. K. and D. I. (2023). Access to Nature for Persons with Disabilities : Perspectives and Practices of Swedish Tourism Providers Access to Nature for Persons with Disabilities : Perspectives and Practices of Swedish Tourism Providers. *Tourism Planning & Development ISSN:*, 20(3), 336–354. <https://doi.org/10.1080/21568316.2022.2160489>
- Shafaq Masud & Ahmad Khan. (2024). Policy implementation barriers in climate change adaptation : The case of Pakistan. *Environmental Policy and Governance*, 34(1), 42–52. <https://doi.org/10.1002/eet.2054>
- Sidrah Ilyas, M. F. K. & H. S. I. (2020). An Exploratory Study about the Role of Experiential Learning for Developing Professional Skills at Higher Education. *Global Social Sciences Review*, V(III), 341–350. [https://doi.org/10.31703/gssr.2020\(v-iii\).36](https://doi.org/10.31703/gssr.2020(v-iii).36)
- Simon Darcy, B. M. and S. S. (2020). From tourism and disability to accessible tourism : a perspective article. *Tourism Review*, November. <https://doi.org/10.1108/TR-07-2019-0323>
- Stephan Hügel & Anna R. Davies. (2020). Public participation, engagement, and climate change adaptation: A review of the research literature. *Wiley Interdisciplinary Reviews: Climate Change*, 11(4), 1–20. <https://doi.org/10.1002/wcc.645>
- Sugiyono. (2022). *Metode Penelitian Kualitatif, Kuantitatif dan R&D. Penerbit. Alfabeta. Cetakan Ke-29. Bandung.*

- Syamsu Rijal. (2023). The Importance of Community Involvement in Public Management Planning and Decision-Making Processes. *Journal of Contemporary Administration and Management (ADMAN)*, 1(2), 84–92. <https://doi.org/10.61100/adman.v1i2.27>
- Tawanda Makuyana & Engelina du Plessis. (2022). Towards Making Tourism Education Programmes More Inclusive : From The Perceptive of Disabled People Towards Making Tourism Education Programmes More Inclusive : From The Perceptive of Disabled People Tawanda Makuyana * Tourism Research in Economic , Envir. *Journal of Hospitality, Tourism and Leisure.*, 11(1), 118–134.
- TEMPO.CO. (2023). Hak Aksesibilitas Kesehatan untuk Penyandang. *Disabilitas. Diakses 11 November 2023 Di*<https://Article33.or.Id/Id/Berita/Tempo-Co-Hak-Aksesibilitas-Kesehatan-Untuk-Penyandang-Disabilitas/>.
- Thowayeb H. Hassan, Hossam S. Shehata, Mohammed El-Dief, A. E. S. (2020). The social responsibility of tourism and hotel establishments and their role in sustainable tourism development in Al-Ahsa , Saudi Arabia. *Geojournal of Tourism and Geosites*, 33(4), 1564–1570. <https://doi.org/10.30892/gtg.334sp18-609>
- TimesIndonesia co.id. (2022). 4 Penyandang Disabilitas Asal Malut Ikuti Bimbingan Sosial di Makassar. <https://Timesindonesia.Co.Id/Peristiwa-Daerah/244836/4-Penyandang-Disabilitas-Asal-Malut-Ikuti-Bimbingan-Sosial-Di-Makassar>. Diakses Pada Tanggal 21 Desember 2022.
- Trinidad Domínguez Vila, Lucía Rubio-Escuderos, E. A. G. (2024). Accessible tourism : using technology to increase social equality for people with disabilities. *Tourism Review*. <https://doi.org/10.1108/TR-11-2023-0812>
- Vila, Trinidad Domínguez, Elisa Alén González, Simon Darcy, and E. A. (2017). Website accessibility in the tourism industry : an analysis of official national tourism organization websites around the world. *Disability and Rehabilitation*, 0(0), 1–12. <https://doi.org/10.1080/09638288.2017.1362709>
- Wondirad, Amare, Denis Tolkach, and B. K. (2020). Stakeholder collaboration as a major factor for sustainable ecotourism development in developing countries. *Tourism Management*, 78(October 2019), 104024. <https://doi.org/10.1016/j.tourman.2019.104024>
- Yi Chao , Lina Gao , Yongqi Liu , Nai Yang, Xinxin Lyu, Y. Z. and Q. G. (2024). Multi-perspective perception of urban relative poverty and its associated factors analysis : A case study of Wuhan City. *Cities*, 153(August), 105320. <https://doi.org/10.1016/j.cities.2024.105320>
- Yunlai Zhang , Lixin Wang, Y. Z. and F. T. (2023). Heliyon Cooperation, Hotspots and Prospects for Tourism Environmental Impact Assessments. *Heliyon* 9(6): E17109. <https://doi.org/10.1016/j.heliyon.2023.e17109>.
- Zhang, Y., Xiao, X., Cao, R., Zheng, C., Guo, Y., Gong, W., & Wei, Z. (2020). How important is community participation to eco-environmental conservation in protected areas ? From the perspective of predicting locals ' pro-environmental behaviours. *Science of the Total Environment*, 739(155), 139889. <https://doi.org/10.1016/j.scitotenv.2020.139889>

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