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Push and Pull Motivations as Predictors of Ecotourist Satisfaction: Evidence from Yogyakarta

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Abstract: *This study aims to identify the underlying dimensions of push and pull motivations among ecotourists and examine their respective effects on tourist satisfaction at ecotourism destinations in Yogyakarta, Indonesia. This study aims to identify the underlying dimensions of push and pull motivations among ecotourists and examine their respective effects on tourist satisfaction at ecotourism destinations. The analysis identified two dimensions of ecotourist motivation. Pull motivation comprises natural scenery, adventure activities, green landscapes, rural community interaction, hiking and walking, photography, and amenities. Push motivation includes escape, refreshment, relief from daily routines, sports, and specific travel purposes. Both dimensions exhibit positive and statistically significant relationships with tourist satisfaction. Push motivation demonstrates a stronger standardised coefficient (β = 0.528) than pull motivation (β = 0.228). The model explains 42.5% of the variance in tourist satisfaction, highlighting the importance of tourists' internal psychological needs alongside destination attributes in shaping their evaluations of ecotourism experience. This study provides empirical evidence from Yogyakarta by distinguishing the contributions of push and pull motivations to ecotourist satisfaction. The findings highlight the relevance of incorporating both internal travel motivations and destination-related attributes into ecotourism planning and management.*

INTRODUCTION

Ecotourism is a form of tourism that emphasises nature-based experiences, environmental conservation, and interaction with local communities. Ceballos-Lascuráin (1996) describes ecotourism as travel to relatively undisturbed natural areas for purposes such as appreciating scenery, learning about nature, and observing biodiversity, including endangered species. Similarly, Hetzer (1965) highlights the importance of minimising environmental impacts, maximising benefits for host communities, and enhancing tourist satisfaction. Fennel (2002),

further explains that ecotourists seek a deeper understanding of the attractions they visit and are willing to engage with local communities. These characteristics distinguish ecotourism from tourism activities that focus primarily on conventional recreational experiences.

Tourist motivation in ecotourism can be understood through the push–pull motivation framework (Su et al., 2020). Push factors refer to internal psychological needs that encourage individuals to travel, including escape, relaxation, social interaction, novelty, knowledge acquisition, and self-development development (Carvache-Franco, Carvache-Franco, Carvache-Franco, & Borja-Moran, 2022; Massi & Nisco, 2019). In contrast, pull factors relate to destination attributes that attract visitors, such as natural scenery, environmental resources, tourism activities, facilities, and amenities (Amir et al., 2024; Carvache-Franco et al., 2021; Hoang et al., 2022). These two motivational dimensions may operate simultaneously or independently, depending on individual preferences and destination characteristics. Understanding both dimensions is therefore important for identifying tourist preferences and developing appropriate ecotourism products.

Tourist motivation is a relevant consideration for tourism stakeholders when designing destination development strategies and improving visitor experiences (Chen et al., 2021). In Indonesia, ecotourism has considerable development potential, particularly in rural areas supported by diverse natural resources. Yogyakarta represents an important destination for domestic tourists seeking nature-based and soft-adventure experiences (see The Table 2, Figure.1). Its diverse attractions include forests, mountains, caves, rivers, beaches, and agricultural landscapes. Ecotourism visits reportedly accounted for approximately 40% of total tourist visits to Yogyakarta during the period examined in the original study. This potential also creates opportunities to support local community welfare through tourism development (Ginting & Triska, 2023; Zakia, 2021).

Despite this potential, research in Indonesia has paid considerable attention to ecotourism attraction development and its impacts, while the motivational factors underlying tourists' destination choices remain insufficiently explored in the context examined by this study. Identifying the dimensions of push and pull motivation and examining their relationships with tourist satisfaction can provide a more specific understanding of ecotourist behaviour.

Accordingly, this study aims to identify the push and pull motivational dimensions of ecotourists visiting destinations in Yogyakarta and examine their effects on tourist satisfaction. By analysing these motivational dimensions as predictors of satisfaction, the study seeks to provide empirical insights for improving ecotourism attraction development, destination management, and visitor experiences. Understanding these relationships may also contribute to broader efforts to strengthen tourist satisfaction and loyalty (Carvache-Franco, Carvache-Franco, Carvache-Franco, & Borja-Moran, 2022).

LITERATURE REVIEW AND HYPOTHESES

Maslow's theory of human needs provides a classical foundation for understanding individual motivation. It suggests that needs drive individuals to undertake activities aimed at fulfilling their expectations (Huang & Hsu, 2009). Motivation reflects the influence of needs on individual attitudes and behaviour (Jogaratnam et al., 2007). In tourism, motivation is commonly classified into push and pull factors (Crompton, 1979; Su et al., 2020). Push factors originate from internal psychological needs, whereas pull factors arise from destination attributes that attract visitors.

Ecotourist motivation varies according to individual preferences and levels of engagement with nature. Ajuhari et al. (2023) identify three ecotourist segments characterised by different levels of

nature attachment. Highly attached visitors seek immersive nature experiences, adventure activities, and specialised pursuits, such as observing wildlife or conducting research. Visitors with moderate or lower attachment are more likely to prioritise scenic views, relaxation, escape from daily routines, photography, interaction with rural communities, and accessible outdoor activities. These differences indicate the diversity of motivations underlying ecotourism participation. It is these moderate and low attachment populations that actually dominate the ecotourism market share in various countries in the world.

Previous studies have identified various motivational factors. Research in Ecuador found that ecotourists were motivated by rewards, escape, nature-related attractions, personal development, and interpersonal relationships by (Carvache-Franco, Carvache-Franco, Carvache-Franco, & Borja-Moran, 2022). Dey et al. (2020) highlighted cultural and rural attractions, destination location, and transportation, while (Amir et al., 2024; Carvache-Franco et al., 2021) emphasised novelty and escape. Crompton (1979) also identified relaxation, prestige, social interaction, novelty, and education as important travel motives.

Destination attributes and visitor experiences are also relevant to satisfaction and future behaviour. Chen et al. (2021) associated ecotourist satisfaction with resource development and the availability of facilities and amenities. Dagustani et al. (2022) and Quynh et al. (2021) highlighted the roles of destination image and memorable tourism experiences in shaping revisit intentions and loyalty. Similarly, Arowosafe et al. (2022) identified escape, nature appreciation, social interaction, and sports, while Pham and Khanh (2021) emphasised escape, novelty-related experiences, and socialisation. Destination facilities, amenities, urban services, and distinctive cultural attractions may also influence tourist motivation (Santamaria et al., 2021). Another factor that is considered to move tourists to come to a destination is a distinctive culture (Hoang et al., 2022; Wang & Leou, 2015; Yan & Halpenny, 2019)

Understanding these motivational dimensions is essential for tourism marketing, product development, and visitor segmentation (Halkos et al., 2021; Jeong, 2014; Smith et al., 2022) . For this reason, this research aims to simplify a number of these motivations into groups, making them easier to identify. Based on the review of the theories above, motivational factors have many unique variations for each individual, if it is inventoried there are more than 20 types of tourist motivation when visiting ecotourism destinations. Motivation that internally comes from individual desire factors (needs and wants) and external motivation which is influenced by product factors and the attractiveness of a destination due to the availability of attractions, facilities, and amenities or factors related to the destination image (Khanh & Phong, 2020; Quynh et al., 2021; Thuy & Thao, 2019).

Although ecotourist motivation encompasses diverse individual needs and destination-related preferences, the push–pull framework provides a useful basis for classifying these factors. Push motivation helps explain tourists' internal reasons for travelling, whereas pull motivation identifies destination attributes that attract them. Both dimensions may inform destination development and the improvement of visitor experiences (Carvache-Franco, Carvache-Franco, Carvache-Franco, & Borja-Mor´an, 2022; Chen et al., 2021).

Based on this theoretical and empirical background, this study proposes the following hypotheses:

H1 : Pull Motivations Has Significant Impact on Ecotourist's Satisfaction

H2 : Push Motivation Has Significant Impact to Ecotourist's Satisfaction

METHOD

Research Location

The research location is in Yogyakarta which is known as a favorite tourist destination, especially for domestic. Based on the number of tourists visiting tourist attractions in Indonesia, which reached approximately 28.3 million people in 2019 and has decreased since the pandemic, the percentage of ecotourism enthusiasts can be said to have remained high, reaching an average of 38% over the last five years. This indicates that the ecotourism attraction in Yogyakarta is quite attractive for tourists. The following is data that can provide an overview of the research area and its ecotourism potential

Table 1. Total Visitors to Ecotourism Destination in Yogyakarta

Year	Total Visitor to All Tourism Attraction	Total Visitor to Ecotourism Destination	Percentage of Ecoturists
2017	25,950,793	10,639,825	41%
2018	26,515,788	10,075,999	38%
2019	28,324,394	12,179,489	43%
2020	9,920,354	2,976,106	30%
2021	7,854,170	2,984,585	38%
Average			38%

Source: Processed Based on Yogyakarta Tourism Statistic Year 2022 (visitingjogja.jogjaprov.go.id, 2025)

Table 2. Potential Ecotourism Destinations in Yogyakarta Based on Resources

Resources	Forest	Mountain	Valley/ hill/ Karst	River/ lake/ waterfall	Beach/ small island	Farming/ agriculture
Name of Destination	• Wanagama Forest • Bunder Nature Reserve • Sermo Wildlife Reserve • Paliyan Wildlife Reserve • Kalibiru Tourism Forest	• Nglanggeran Ancient Volcano • Merapi Mountain • Suroloyo Hill	• Siwa Plateu • Seribu Mountain Karst • Kalisuci Cave • Pindul Cave • Kiskendo Cave • Jomblang Cave • Cerme Cave • Rancang Kencono Cave • Parangtritis Sand Dunes	• Kalikuning River • Sri Gethuk Waterfall • Banyunibo, Sidoharjo Waterfall • Progo River • Kali Suci River	• Siung Beach • Wediombo Beach • Jung Wok Beach • Ngrenehan Beach • Sadeng Beach • Ngobaran Beach • Baron Beach • Drini Beach • Parangtritis Beach • Glagah Beach • Congot Beach	• Jackfruit Agrotourism Turi • Orang Utan Center (WRC) • Nglinggo Plantation • Nglanggeran Fruit Plantation • Mangunan Plantation • Menoreh Hill (Flowers & Tea Plantation)

Source: Processed Based on Yogyakarta Tourism Statistic Year 2022 (visitingjogja.jogjaprov.go.id, 2025)

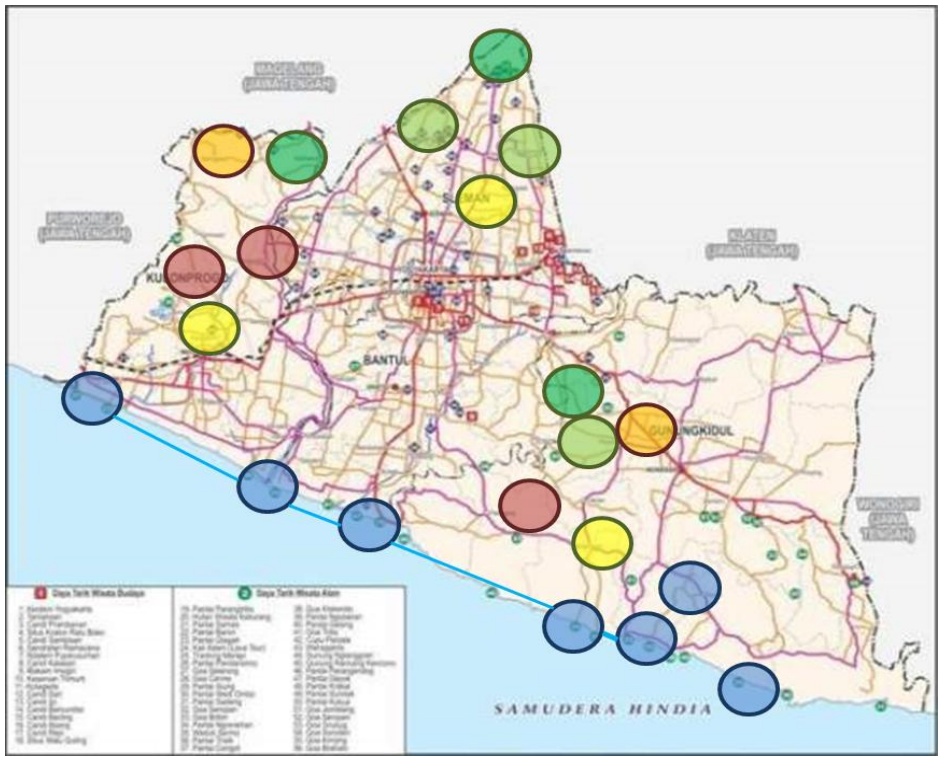


Figure 1. Potential Ecotourism Cluster Area

Sample Respondent & Determining the Variables

The first step before distributing the questionnaires was to conduct a random test for 30 people to determine the motivational variables to be tested (Figure 2.) In this case the researcher initially proposed 20 variables. The variables with the highest number of voters are selected, so there are 12 variables. This variable then becomes the test variable and it will be distinguished which are included in the push motives variables and which are included as the pull motives variables. The 12 variables referred to consist of : 1) enjoy natural scenic view (NatScenicV), 2)interesting on special purposes such as watching the certain plant or animal (SpecPurpose), 3)desire to go somewhere pleasant (Escape), 4)Sport, 5) adventure activities (AdvActivities), 6) do a soft adventure such as hiking and walking (HiWalk), 7) enjoy the amenities (Amenities), 8)enjoy taking photos (Photography), 9)involved and interaction with rural communities (RuralComm), 10) see the green color such as forest, rice fields (Green Scenic) 11) refreshing and relaxing (Refresh), 12) get out from daily routine (OutofRoutine).

After the questionnaire was completed, the researcher still tested the validity and reliability of the questions on a number of randomly selected respondents (not ecotourists). Some statements were later corrected. Once corrected, the questionnaire is ready to be distributed to tourists. This study involved 221 ecotourists who were taken randomly to a number of ecotourism destinations in Yogyakarta. The sampling period was 4 months, especially during the holiday season or long weekend during (February – Mei 2026). The instrument used is a questionnaire with closed questions and measurement using Likert's Scale starting from 5 as the highest and 1 as the lowest value.

Analysis Method and Research Model

This research is a quantitative study that aims to test the construct, namely the variable

motivation of ecotourists visiting a number of ecotourism destinations in Yogyakarta. This variable is tested to obtain the type of construct that corresponds to the type of motivation, namely push motives or pull motives. The relevant analysis method is Confirmatory Factor Analysis (CFA). CFA is an analytical method that is still reliable in testing the construct validity of a measuring instrument, especially in the social sciences (Costa & Sarmento, 2019; Hoyle, 2004; Stapleton, 1997). Because of its confirmatory nature, CFA is able to measure the extent to which a construct is able to measure one thing, in this matter is motivation.

Another analytical method used is Multiple Linear Regression Analysis (MLRA), which is a formula for finding the mathematical relationship between two or more independent variables and the dependent variable. In this study, the relationship sought is the effect of motivation as an independent variable (X) with tourist satisfaction as the dependent variable (Y) (Coulton & Chow, 2008; Hair et al., 2010). The research steps will be carried out by first determining the motivation group with CFA, then looking at the relationship of each motivation group with ecotourist satisfaction with the MLRA test.

The research model is as depicted in **Figure 2** below:

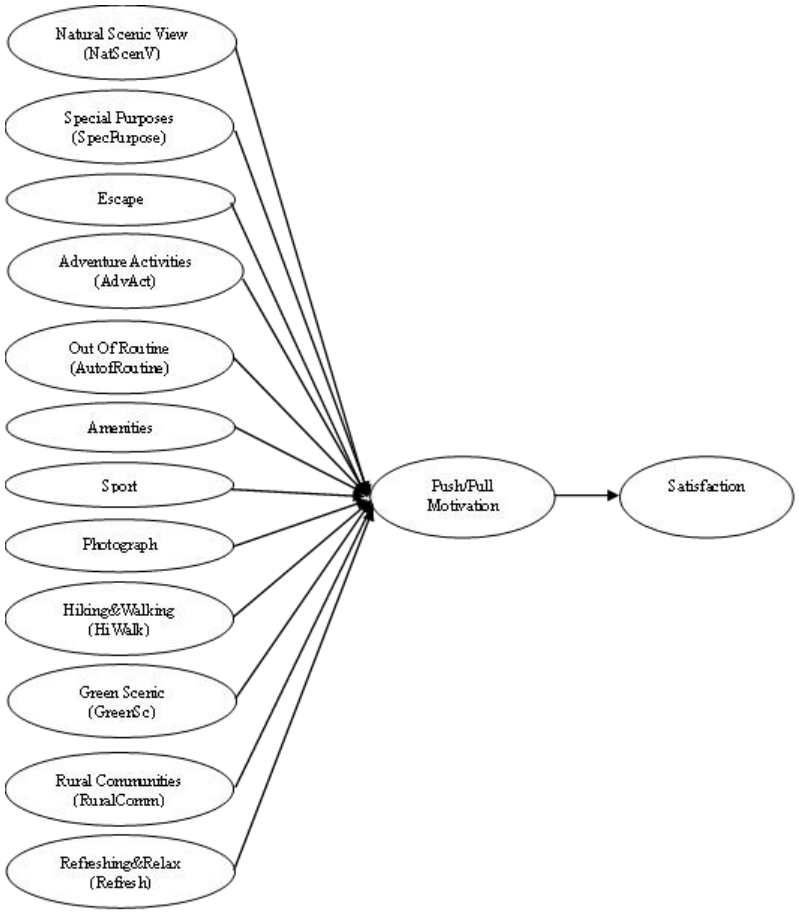


Figure 2. Research Model & Construct Variables

RESULT AND DISCUSSION

Respondent Profile

Respondents are tourists who visit ecotourism attractions, their characteristics are very interesting. As shows at Table 3. that most respondents are male (58.4%), aged between 20 - 50 years old (91%), average income level of 3 - 8 million rupiah (±533USD), spending ability per visit less than 200 thousand rupiah (±13USD). The main source of information about the destination is social media (37.6%) and friends/colleagues (32.6%). Most are first timer visitors (67%). Most did not stay overnight (88.2%) and visited with family (52.5%). Based on this profile, the interesting thing is that they are first-timers, spend less, and don't stay overnight. Another interesting aspect that the main segment for ecotourism attraction is family. For more details, the profile of the respondent can be seen in the following table:

Table 3. Socio Demographic Profile of Ecotourists

				Percentage (N=221)
Gender			**Source Information**	
Male	58.4		Media Social	37.6
Female	41.6		Friends/Colleague	32.6
Aged			Family	20.4
< 20 Years Old	5.4		Travel Agent/Operator	4.5
20 - 30 Years Old	38.9		Others	5.0
31 - 40 Years Old	37.1		**Visit Frequency**	
41 - 50 Years Old	14.9		1st Time Visit	67.0
> 50 Years Old	3.6		2nd Time Visit	21.7
Income Level			3rd Time Visit	8.1
< 3.000.000 IDR	9.0		4th Time Visit	1.8
3.000.000 - 5.000.000 IDR	53.8		5th Time Visit or More	1.4
5.000.000 - 8.000.000 IDR	33.0		**Overnight**	
> 8.000.000 IDR	4.1		No Stay	88.2
Spending Per Visit			1 Day	11.8
< 200.000 IDR	57.5		**Trip Companion**	
200.000 - 400.000 IDR	34.8		None	8.1
400.000 - 600.000 IDR	6.3		Partner	8.1
> 600.000 IDR	1.4		Family	52.5
			Friends	31.2

Push and Pull Ecotourist's Motivation

Using principal component analysis to separate the antecedent variables of pull and push motivation using the varimax rotation method can pinpoint factors or variables that have low and high load values. Tests carried out using Confirmatory Factor Analysis (CFA) are also Validity testing in the study. CFA is used to test the unidimensional of whether the indicators used can confirm a construct or variable.

Measurement of the validity of questionnaire instrument items can be factor analysis measured through the loading factor value with the help of an SPSS 25.0 computer. Loading factor is the correlation of question items with the constructs they measure. If the loading factor value is greater than or equal to 0.5 (≥0.5), the indicator in question is valid and means that the indicator can be used to measure a construct. To test whether there is a correlation between variables, the Bartlett Test of Sphericity is used. If the result is significant ≥0.5, it means that the correlation

matrix has a significant correlation with a number of variables.
Using the CFA validity test Table 4 below shows that the KMO (Kaiser-Meyer-Olkin) value and loading factor are greater than 0.5 which is 0.865. Variable indicators have also formed groups based on their dimensions. Thus, it shows that the indicators have a good ability to represent the dimensions of the research variables. Therefore, it can be concluded that all statements in the questionnaire can be said to be feasible as instruments for measuring research data.
Based on the value of the varimax rotated component matrix, the first factor was novelty and at the same time was a factor with highest explanatory capacity 40.009 or 40% of the total variance. This group of factors is referred to as the pull factor of motivations which consists of Natural Scenic View, Adventure Activity, Green Scenic, Rural Community, Photograph, and Amenities. The second factor group is referred to as the push factor of motivation (varimax rotated component matrix 2) which consists of Escape, Refreshing and Relax, Out of Routine, Sport, and Special Purposes. In this group, the factor has a lower explanatory capacity which is 15.748 or 15,7% of the total variance.

Table 4. Factor Analysis

Motivation	Varimax Rotated Component Matrix		Factor
	1	2	
NatScenV	0.815		Pull
AdvActiv	0.790		
GreenSc	0.716		
RuralComm	0.704		
HiWalk	0.702		
Photograph	0.701		
Amenities	0.640		
Escape		0.768	Push
Refresh		0.763	
OutofRoutine		0.756	
Sport		0.694	
SpecPurpose		0.663	
Eigenvalues	**4.812**	**1.890**	
% of Eplained Variance	**40.099**	**15.748**	
KMO (Kaiser-Meyer-Olkin) Measure of Sampling Adequacy		**0.865**	
Sphericity test of Bartlett	**Chi-Square = 1032.129 Sig. = 0.000**		

Extraction method: Analysis of principal components Rotation method: Varimax with Kaiser

Reliability Test for Pull and Push Factor of Motivation
Reliability test is showing the consistency and stability of a measurement scale. The research instrument can be said to be reliable if the Cronbach's Alpha value is> 0.7. The test result shows that pull factors has a Cronbach's Alpha value of 0.864 or above 0.7, and push factor has a Cronbach's Alpha value of 0.793 or above 0.7. Both groups of variables are declared reliable. The following are the results of the reliability test:

Table 5. Item Reliability Test Results – Research Variable Item

Variable Group	Cronbach's Alpha	Comment
Pull	0,864	Reliable
Push	0,793	Reliable

Push and Pull Motivations and Ecotourist Satisfaction

The next step after CFA test is test the effect of Motivation (Pull and Push) on Ecotourist Satisfaction using MLRA. In multiple linear regression analysis model will be tested simultaneously (F test) and partially (t test). The provisions of the F test and t test significance tests are accepting the hypothesis if the probability (p) value ≤ 0.05 means that Motivation (Pull and Push) simultaneously and partially has a significant influence on Satisfaction.

According to Simultaneous Regression, the F-count value is 82.161 with a probability (p) value = 0.000 or less than 0.05, it states that Pull & Push Factors simultaneously affects Satisfaction.

Table 5. Simultaneous Regression Test Results (F-Test)

ANOVAa						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	254.854	2	127.427	82.161	.000b
	Residual	338.105	218	1.551		
	Total	592.959	220			

a. Dependent Variable: Revisit

b. Predictors: (Constant), Push, Pull

The magnitude of the influence of Motivation (Pull & Push) on Satisfaction is indicated by the Adjusted R Square value of 0.425. This means that 42.5% of Satisfaction is influenced by Motivation (Pull & Push), while the remaining 57.5% (100%-42.5%) is influenced by other variables.

Table 6. Test Results of the Coefficient of Determination R Square

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.656a	.430	.425	1.245

a. Predictors: (Constant), Push, Pull

Based on the partial regression test on Pull motivation, the t-count value is 4.071 with a probability (p) = 0.000, the t test results shows that the probability (p) value is 0.006 or less than 0.05, it can be concluded that Pull Motivation has a significant effect on Satisfaction. Meanwhile, based on the partial regression test on Push Motivation, the t-count value is 9.413 with a probability (p) = 0.000, the t test results shows that the probability (p) value is 0.000 or less than 0.05, it can be concluded that Push Motivation has a significant effect on Satisfaction.

Table 7. Partial Regression Test Results (T-Test)

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.261	.822		2.751	.006
	Pull	.106	.026	.228	4.071	.000
	Push	.342	.036	.528	9.413	.000

a. Dependent Variable: Revisit

A summary of the results of multiple linear regression analysis that has been carried out is as follows:

Table 8. Pull and Push Motivations and The Effect to Satisfaction

Variables	B	Std. Error	Beta	t-value	Sig. t	Comment
H1: Pull → Satisfaction	0.106	0.026	0.228	4.071	0.000	Significant
H2: Push →Satisfaction	0.342	0.036	0.528	9.413	0.000	Significant

Based on table 8 can be explained that the pull factor regression coefficient of 0.106 of all the factors tested, shows that the pull motivation has a significant effect to ecotourist satisfaction. This is states that by increasing factors related to pull motivation, it will be able to increase ecotourist satisfaction level. The push factor regression coefficient of 0.342 from all the factors tested, shows that the push motivation variable has significant effect to ecotourist satisfaction. This states that an increase factor related to push motivation will be able to increase ecotourists satisfaction level

Discussion

Understanding Eco-Tourist Motivation through the Pus-Pull Framework

The findings provide empirical support for classifying ecotourist motivation into two complementary dimensions: push and pull motivation. The confirmatory factor analysis identifies natural scenery, adventure activities, green landscapes, rural communities, hiking and walking, photography, and amenities as pull factors. Meanwhile, escape, refreshment, departure from daily routines, sports, and special purposes constitute push factors. These findings support the applicability of the push–pull framework to ecotourism in Yogyakarta, while illustrating how general travel motivations are expressed through nature-based activities and destination-specific attributes (Arowosafe et al., 2022; Crompton, 1979; Sanchez-Torres et al., 2022)

An important insight is that ecotourism motivation extends beyond the desire to appreciate natural attractions. Visitors may seek psychological recovery, temporary escape from everyday responsibilities, physical activity, or opportunities to pursue specific interests. At the same time, destination characteristics provide tangible reasons to select a particular location. This interpretation is consistent with previous studies identifying escape, novelty, nature appreciation, social interaction, and recreational activities as important motivations for ecotourism participation (Arowosafe et al., 2022; Carvache-Franco et al., 2021; Pham & Khanh, 2021; Pham, 2022). The findings therefore suggest that ecotourism experiences emerge from the interaction between visitors' internal needs and the opportunities offered by the destination.

Why Push Motivation Has a Stronger Relationship with Satisfaction

The regression results reveal that push motivation has a stronger standardised coefficient (β = 0.528) than pull motivation (β = 0.228). Both relationships are statistically significant ($p < 0.001$), supporting H1 and H2. The difference between these coefficients offers an important insight into the motivational characteristics of ecotourists visiting Yogyakarta.

One possible interpretation is that visitors evaluate ecotourism experiences not only according to the attractiveness of the destination but also according to the extent to which the visit fulfils their personal needs. Natural scenery, adventure opportunities, and supporting facilities may initially attract visitors; however, the experience becomes more personally meaningful when it enables them to relax, escape routine activities, engage in physical recreation, or pursue particular interests. In this sense, destination attributes provide the setting for the experience, while internal motivations help explain its perceived value.

This interpretation is broadly consistent with Crompton (1979) argument that travel decisions are influenced by socio-psychological motives, including relaxation, novelty, and social interaction. It also complements research linking ecotourism motivation with satisfaction and loyalty (Amir et al., 2024; Carvache-Franco, Carvache-Franco, Carvache-Franco, & Borja-Mor´an, 2022). Nevertheless, the stronger coefficient for push motivation should not be interpreted as evidence that destination attributes are unimportant. Rather, within the estimated model, internal motivational factors demonstrate a stronger association with the outcome than external attraction-related factors.

Destination Attractiveness as a Foundation for Visitor Satisfaction

Although push motivation demonstrates the stronger standardised relationship, pull motivation remains statistically significant. The factor loadings indicate that natural scenery (0.815) and adventure activities (0.790) are among the strongest indicators of pull motivation, followed by green landscapes (0.716), rural communities (0.704), hiking and walking (0.702), photography (0.701), and amenities (0.640). These results highlight the importance of preserving natural assets while ensuring that visitors can access and experience them appropriately.

For ecotourism destinations in Yogyakarta, attractive landscapes alone may be insufficient if visitors encounter inadequate facilities, poorly managed activity areas, or limited opportunities to interact with local communities. Destination management should therefore connect environmental conservation with the provision of appropriate visitor infrastructure and activities. This approach is consistent with Chen et al. (2021), who examined relationships between stakeholders, satisfaction, and resource development in marine ecotourism, and with Quynh et al. (2021), who highlighted the relevance of destination image and emotional experiences to ecotourism satisfaction.

The practical implication is that infrastructure development should support, rather than undermine, the ecological qualities that make destinations attractive. Well-maintained walking trails, appropriate safety facilities, accessible viewing points, responsible photography opportunities, and locally managed tourism services can help translate natural resources into meaningful visitor experiences. The objective is not simply to increase the number of facilities, but to ensure that destination development corresponds to visitors' expectations while maintaining environmental quality.

Implications for Ecotourism Management in Yogyakarta

The combined influence of push and pull motivation suggests that ecotourism management requires an integrated strategy. Destination managers should maintain the physical attractiveness of ecotourism sites while designing experiences that respond to visitors' psychological and recreational needs. For example, marketing communication can emphasise relaxation, escape from daily routines, outdoor recreation, and opportunities for personal discovery. On-site management can complement these messages through well-designed nature trails, guided activities, interpretation of local biodiversity, photography points, and opportunities for respectful interaction with rural communities.

The findings also have implications for market segmentation. Visitors seeking relaxation may respond to quiet natural settings and accessible facilities, whereas adventure-oriented visitors may prioritise hiking routes and opportunities for physical activity. Visitors with specific interests may value interpretation, biodiversity observation, or guided learning experiences. These differences suggest that a single promotional message or standardised visitor experience may not address the needs of all ecotourists. A more differentiated approach could help destinations align their products and communications with distinct motivational profiles, consistent with the importance of motivation for tourism marketing and segmentation (Halkos et al., 2021; Hoang et al., 2022; Jeong, 2014)

Furthermore, destination managers should not assume that satisfaction automatically produces repeat visitation or loyalty. The present findings establish relationships between motivation and the study outcome, but they do not independently demonstrate the mechanisms linking satisfaction to subsequent behaviour. Future research could examine whether memorable tourism experiences, perceived value, destination image, or environmental engagement help explain how motivational fulfilment influences revisit intentions

CONCLUSION

This study examined the relationship between push and pull motivations and ecotourist satisfaction in Yogyakarta. The findings indicate that both motivational dimensions are significantly associated with satisfaction, although push motivation demonstrates a stronger relationship ($\beta = 0.528$), $p < 0.001$) than pull motivation ($\beta = 0.228$), $p < 0.001$). This distinction suggests that ecotourism experiences should not be understood solely in terms of destination attractiveness. Visitors' internal needs, including the desire to escape daily routines, relax, refresh themselves and pursue personal interests, also play an important role in shaping their evaluations of the experience. Nevertheless, the contribution of pull motivation confirms that destination attributes remain relevant to visitor satisfaction.

The principal implication is that effective ecotourism management requires an integrated approach that connects visitors' psychological motivations with the qualities of the destination. In Yogyakarta, managers should therefore combine the protection and interpretation of natural landscapes with opportunities for relaxation, exploration, outdoor activities and meaningful interaction with local communities. Rather than relying exclusively on the visual appeal of natural attractions, destination development should focus on creating experiences that respond to visitors' underlying needs while maintaining the environmental and socio-cultural qualities that distinguish ecotourism from conventional tourism.

The study contributes to the application of the push–pull framework in ecotourism by demonstrating that the two motivational dimensions are not equally associated with satisfaction in the context examined. However, these findings should be interpreted within the geographical

and methodological boundaries of the research. The analysis explains part, but not all, of the variation in visitor satisfaction, indicating that other factors may also be relevant. Future research could examine the roles of perceived environmental quality, service performance, destination image and environmental awareness, as well as compare ecotourism destinations with different characteristics. Such work would help clarify how internal motivations and destination attributes interact in shaping visitor evaluations and support more evidence-based ecotourism management.

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