

**FARMER'S CHALLENGES ON WILLINGNESS TO JOIN AGRI-TOURISM:  
SPECIAL REFERENCE TO NUWARA ELIYA AGRO-ECOLOGICAL ZONE**

**S.D.A. Sumanapala<sup>1,\*</sup> and Dilushi Kodithuwakku<sup>2</sup>**

*<sup>1,2</sup> Department of Social Statistics, University of Kelaniya, Kelaniya, Sri Lanka*

*\*Corresponding Author (email: amasha9612@gmail.com)*

**INTRODUCTION**

Tourism is strategically important industry to Sri Lanka's economy, serving as the nation's third-largest export earner and contributing 10.3% to the total GDP (Central Bank of Sri Lanka - CBSL, 2019). With positive global and national trends supporting the sector, the country has great potential with various opportunities to sustainably develop the Sri Lankan tourism industry through alternative tourism ventures, which remain relatively untapped (Perera, 2016). Among these alternative tourism concepts, Agri-tourism stands out as a promising development dimension (Mahaliyanaarachchi, 2015). It holds great potential in Sri Lanka and aligns with the government's focus on sustainable tourism strategies. In both industrial and developing countries, Agri-tourism has proven to contribute significantly to regional development and poverty alleviation (Akpınar et al., 2005; Malkanthi & Routry, 2011).

Sri Lanka's current economic crisis, developing the tourism industry, especially Agri-tourism, becomes even more crucial as it requires minimal additional costs. This study aims to address challenges faced by the agriculture industry while offering solutions to existing issues in the tourism sector, all in line with the Sustainable Development Goals (SDGs) for 2030. The study seeks to foster local development and create employment opportunities by promoting sustainable tourism growth through Agri-tourism. Thus, this research focuses on identifying the challenges related to developing Agri-tourism in Sri Lanka.

In Agri-tourism, farmers play a crucial role in determining the success of agritourism ventures. On the supply side, farmers and agricultural firms provide the call experience and attractions that attract tourists. They offer visitors an opportunity to experience and learn about agricultural activities, rural lifestyles, and the natural environment. Accordingly, Agri-tourism development is primarily based on farmers' intentions and characteristics because they are the key factors determining Agri-tourism success. Therefore, farmers' challenges are necessary to understand before any Agri-tourism implementation because their readiness is the first significant step for Agri-tourism development. Although the motivational factors of current Agri-tourism practitioners have been somewhat studied in industrial countries, the investigation of farmers' challenges before starting Agri-tourism has not been conducted in developed or developing countries.

As such, the primary objective of this study is to identify and comprehend the farmers' challenges concerning the development of Agri-tourism in Sri Lanka. To address this research goal and extract relevant insights, the following research objective is "To identify the farmers' challenges regarding their willingness to join Agri-tourism".

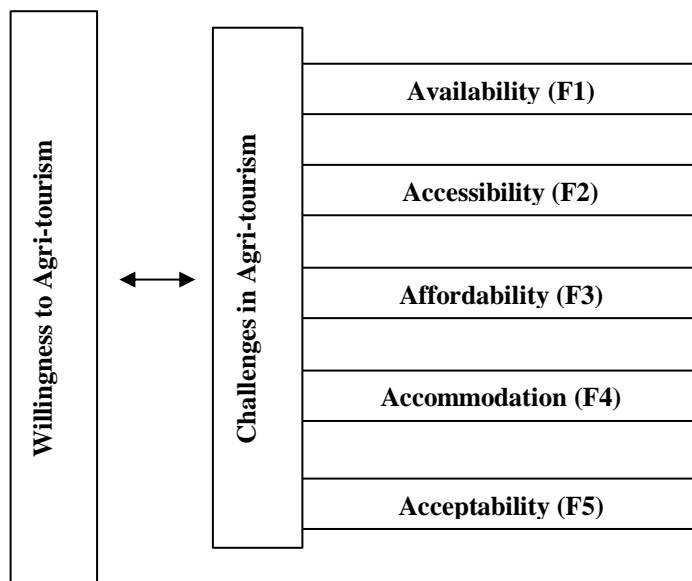
**METHODOLOGY**

The population of this research is farmers in Nuwara Eliya Agro-ecological Zone. Study used "Yamani" method identified 150 sample size with a 15% non-response rate. The sample of 150 farmers was selected considering the 15 Agro-Ecological Regions which are under the Nuwara Eliya district. Under the region, there are 15 sectors, and two were randomly selected as Pattipola and Ambewela. Under farm type, all the Agro-Ecological Regions were considered homogeneous. Data were collected through the questionnaire using the random

sampling methods (farmer list) to gather information on farmers’ general information, information on the farm and crops, perception of Agri-tourism, and challenges in Agri-tourism of farmers who join Nuwara Eliya. Moreover, questions to identify the most and least influencing challenges and issues to develop Agri-tourism in the Nuwara Eliya area. Secondary data was collected by using journal articles, literature reviews, textbooks, websites, and newspaper articles.

The conceptual research model (Figure 1) is developed based on ‘Penchansky and Thomas Model’, proposed by Penchansky and Thomas (1981). The conceptual framework of the study can be illustrated based on that model. The study focuses on the farmers’ challenges on willingness to join Agri-tourism. Chi-square analysis and Binary Logistics Regression Model were carried out to achieve the objective of this study.

**Figure 1**  
*Conceptual Framework*



**RESULTS AND DISCUSSION**

Based on the results, more than 93% of farmers were willing to join Agri-tourism. The Chi-square test was carried out to find whether there is any significant association between willingness to join Agri-tourism and demographic factors of the farmers. The results are shown in figure 2.

**Figure 2***Association between Farmers' willingness to join Agri-tourism and Demographic Factors*

<i>Hypothesis</i>	$\chi^2$	<i>d.f</i>	<i>P- value</i>	<i>C-value</i>
<i>H<sub>0</sub>: There is no significant association between farmers willingness towards Agri-tourism and gender</i>	<b>7.873</b>	<b>1</b>	<b>0.005</b>	<b>0.223</b>
<i>H<sub>0</sub>: There is no significant association between farmers willingness towards Agri-tourism and Marital Status</i>	4.495	4	0.343	0.171
<i>H<sub>0</sub>: There is no significant association between farmers willingness towards Agri-tourism and Age</i>	<b>5.521</b>	<b>4</b>	<b>0.038</b>	<b>0.188</b>
<i>H<sub>0</sub>: There is no significant association between farmers willingness towards Agri-tourism and Education level</i>	1.870	3	0.600	0.111
<i>H<sub>0</sub>: There is no significant association between farmers willingness towards Agri-tourism and Income Level</i>	<b>5.398</b>	<b>2</b>	<b>0.047</b>	<b>0.186</b>
<i>H<sub>0</sub>: There is no significant association between farmers willingness towards Agri-tourism and Number of family members</i>	2.372	2	0.305	0.125

Based on the Chi-square results, gender age, and income level was possible to identify that there is an association between the factors of Agri-tourism.

**Figure 3***Association between Farmers' willingness to join Agri-tourism and Farming Factors*

Hypothesis	$\chi^2$	d.f	P-value	C-value
<i>H<sub>0</sub>: There is no significant association between farmers willingness towards Agri-tourism and Age of experience in farming</i>	3.552	4	0.470	0.152
<i>H<sub>0</sub>: There is no significant association between farmers willingness towards Agri-tourism and type of engagement in farming</i>	2.337	1	0.126	0.124
<i>H<sub>0</sub>: There is no significant association between farmers willingness towards Agri-tourism and Accommodation in the farm</i>	<b>4.538</b>	1	<b>0.033</b>	<b>0.171</b>
<i>H<sub>0</sub>: There is no significant association between farmers willingness towards Agri-tourism and Objective of farming</i>	4.508	2	0.105	0.171
<i>H<sub>0</sub>: There is no significant association between farmers willingness towards Agri-tourism and farming in flowers</i>	<b>11.394</b>	1	<b>0.001</b>	<b>0.266</b>
<i>H<sub>0</sub>: There is no significant association between farmers willingness towards Agri-tourism and Seasons of the farming</i>	1.700	1	0.192	0.106
<i>H<sub>0</sub>: There is no significant association between farmers willingness towards Agri-tourism and farming area</i>	<b>15.130</b>	1	<b>0.000</b>	<b>0.303</b>
<i>H<sub>0</sub>: There is no significant association between farmers willingness towards Agri-tourism and awareness in Agritourism</i>	7.345	3	0.052	0.216

Based on the results, accommodation in the farm, farming in flowers, farming area and awareness in Agri-tourism were possible to identify that there is an association between the factors of Agri-tourism.

*Use of Binary Logistic Regression Model*

The aim of using the binary logistic regression model is to model the nature of willingness toward Agri-tourism (Willingness vs non-willingness) and explanatory variables which describe the challenges in Agri-tourism. Among the respondents found that 93% is willing and 7% is non-willing. Thus, the dependent variable, y, status of the willingness to Agri-tourism is a binary variable such that the category of y=1 (non-willingness to Agri-tourism) and y=0 (willingness to Agri-tourism). The significant of the Hosmer and Lemeshow test statistic concluded that the fitted model is significant at a 5% level. In this case the value received for the final model is greater than 0.05. Therefore, it can be concluded that the model has a good fit. The overall predictive power of the model is very high at 87.9%.

Model summary shows the Pseudo R-square value related to the analysis. According to table 5.30 of the Cox & Snell R<sup>2</sup> and Nagelkerke R<sup>2</sup> indicate that the explain variant action in the dependent variable based on the model variance from 17.5% to 32.8%. Both statistics indicate that the percentage of the variance of the dependent variable is explained by the model. Moreover, Nagelkerke's R<sup>2</sup> suggests that the fitted model explains roughly 32.5% of the

variation in the outcome. The -2 Log likelihood value for this model is 5.047%. Accordingly, the Pseudo-R<sup>2</sup> value shows that approximate amount of variation in the outcome explained by the fitted model. The output is shown in Table 3, and the corresponding model is shown in equation (1).

**Table 1**

*The parameters for the best fitted binary logistic model*

Variable	$\beta$	S.E.	Wald	DF	Sig.	Exp(B)
Unfavorable weather conditions (T9)	2.360	0.824	8.209	1	0.004	10.587
Insufficient literature for agritourism practice (T10)	-3.707	1.428	6.743	1	0.009	.025
Weak communication skill (S14)	1.499	0.715	4.395	1	0.036	4.479
Lack of sanitary facilities (S17)	2.640	0.977	7.297	1	0.007	14.017
Complexity in getting license and support from Government (P25)	3.492	1.021	11.695	1	0.001	32.846
Constant	-3.899	0.756	26.587	1	0.000	.020

Hosmer and Lemeshow Test Statistic:  $\chi^2_2 = 1.196$  ( $p = .879$ )

The results in the table 5.33 Among all the considerable variable only the Unfavorable weather conditions (T9), Insufficient literature for agritourism practice (T10), Weak communication skill (S14), Lack of sanitary facilities (S17) and Complexity in getting license and support from Government (P24) are easier statistically significant between the were the binary logistic regression model when all the variables are taken into consideration simultaneously. Based on the results in the 7<sup>th</sup> column of Table 5.33, the fitted model for the odds ratio for the occurrence of willingness is given in equation (1), where p is the probability of willingness to join Agri-tourism.

$$\frac{P}{1-P} = 0.020 + 10.587 * (T9) + 0.025 * (T10) + 4.479 * (S14) + 14.017 * (S17) + 32.846 * (P25) \quad (1)$$

The results indicate that the odds of unfavorable weather conditions (T9) are 10.587 higher than farmers who are willing to join Agri-tourism when all other variables in the model are fixed. The odd ratio of willingness to join an insufficient literature for Agri-tourism practice (T10) is 0.025 higher than that of farmers who are willingness to join Agri-tourism. Moreover, the odds of Weak communication skill (S14) are 4.479 higher than farmers who are willing to join Agri-tourism. The odds of the Lack of sanitary facilities (S17) are 14.017 higher than that of farmers who are willing to join Agri-tourism when all other variables in the model are fixed. Not only that bus also, the odds of happened Complexity in getting license and support from Government (P25) is 32.846 higher than farmers who are willingness to join Agri-tourism.

## CONCLUSION AND IMPLICATIONS

Based on the results, more than 91% of farmers were willingness to join Agri tourism. Moreover, gender, age, income level, accommodation on the farm, farming in flowers and farming area significantly affect willingness towards Agri-tourism. Further, cross-tabulation revealed that tourists have a high positive perception of willingness to join Agri-tourism. Results of the binary logistic regression model concluded that unfavorable weather conditions, insufficient literature for agritourism practice, weak communication skill, the lack of sanitary facilities and getting license and support from Government statistically significant in the model. Although the motivational factors of current Agri-tourism practitioners have been

somewhat studied in industrial countries, the investigation of farmers' challenges before starting Agri-tourism has not been conducted in developed or developing countries. According to the Malkanthi and Routry (2015), Small size of the farm lands, lack of necessary skills, poor level of product development, poor publicity and promotion are important factors. However, farmers have emphasized the necessity of improving varieties in farm entertainment activities base on environment, upgrading quality of the farm products and hygiene and sanitation facilities and to the destination to enhance the willingness of Agri-tourism.

**Keywords:** Agri-tourism, farmer's challenges, Nuwara Eliya ecological zone, willingness

## REFERENCES

- Akpinar, N., Talay I., Ceylan, C., & Gundus, S. (2011). "Rural women and agri tourism in the context of sustainable rural development: A case Study from Turkey". *Environment Development and Sustainability*, 6(4),473- 486.
- CBSL - Central Bank of Sri Lanka. (2019). Annual Report of Central Bank of Sri Lanka – 2019.Retrieved November 09, 2022, from:<https://www.cbsl.gov.lk/en/publications/economic-and-financial-reports/annual-reports/annual-report-2019>.
- Mahaliyanaarachchi, R. P. (2015). Role of Agri Tourism as a Moderated Rural Business. *Tourism, Leisure and Global Change*. 2, 188- 193.
- Malkanthi, S., & Routry, J. (2011). Potential for Agri tourism development: Evidence from Sri Lanka. *The Journal of Agricultural Sciences*, 45-58.
- Penchansky, R. & Thomas, J.W. (1981) The concept of access: definition and relationship to consumer satisfaction, 127-140, Retrieved January 16, 2023, from:[https://scholar.google.com/scholar?hl=en&as\\_sdt=0%2C5&q=penchansky+and+thomas+1981&btnG=#d=gs\\_qabs&t=1688695225716&u=%23p%3DsJXaG7Y6EkYJ](https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=penchansky+and+thomas+1981&btnG=#d=gs_qabs&t=1688695225716&u=%23p%3DsJXaG7Y6EkYJ)
- Perera, K. K. (2016). An Analysis of Recent Trends in Tourist Arrivals in Sri Lanka. *Athens Journal of Tourism*, 51-80.