

Recreational Activities and Its Impact on Poverty in Sri Lanka

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Abstract

Although Sri Lanka as a developing country has recently reached the lower-middle-income status as per the World Bank, less attention has been paid on the recreational activities and its impacts on poverty. The study attempts to measure the impact of recreational activities on poverty in Sri Lanka. Data were gathered through the Household Income and Expenditure Survey (HIES) which was conducted by the Department of Census and Statistics in Sri Lanka (DCS). The study applied the probit model to analyse data. Findings of the study suggest that entertainment, religious, recreational and cultural activities are significantly related with the non-poor households. The marginal effect shows that spending on entertainment, religious, recreational and cultural activities decrease the probability of being poor by 0.004, 0.001, 0.0028 and 0.0029 percentage points, respectively. Moreover, the study reveals that the coefficient of the socio-economic and demographic variables such as the age, level of education and marital status of the head of the household have a positive effect on being non-poor. Therefore, this research study provides the opportunity to both the investors and policymakers to further investigate on non-poor households and their impact on recreational activities on the social sector. These includes targeting leisure and entertainment industries covering cultural and religious activities.

Keywords: Poverty, Probit model, Recreational activities

Introduction

Recreation is an activity of leisure. Leisure is discretionary time (Thomas 1970) and it is an essential element of human biology and psychology (Daniels 1995). Recreation and entertainment are associated with the improvement and development of a country by means of maintaining a high-quality labour force, reducing the number of sick populations etc. Accordingly, many authors like Kool et al. (2004) and Moncada (2005) state that recreation results in increased efficiency and that it has a direct impact on financial performance, which helps in improving the overall performance and economic impact.

Poverty is a multi-dimensional concept and one of the major challenges which the world faces, with massive implications that hinder sustainable development. Therefore, it is important to measure the impact of recreational activities on poverty. According to the most recent figures, in 2015, 10 percent of the world's population lived on less than US\$1.90 a day (The World Bank 2020) and every tenth person lives on less than \$-int. 1.90 per day (Roser and Ortiz-Ospina 2020). Department of Census and Statistics (DCS) in Sri Lanka indicates that 169,392 households and 843,913 persons live in poverty in Sri Lanka (DCS 2016). Furthermore, the mean monthly income was SLRs. 62,237, while the mean monthly household expenditure on recreational activities was a marginal SLRs.908 (2.5% of total non-food expenditure).

Sri Lanka as a country with over 20 million in population, is considered to be moving towards being a middle-income economy. The country has recorded on average an economic growth of 6.7% over the past decades (Bamunusinghe 2014). Furthermore, Bamunusinghe (2014) stated that income and expenditure are the major factors that influence the economy regardless of the country.

Main aim of this study is to measure the impact of various types of recreational activities on poverty in a systematic way. The Sri Lankan setting is used as a case study. Sri Lanka is considered a developing country with a relatively high percentage of population, either living below or just above the poverty line.

Literature Review

The factors affecting the households' consumption on recreational, entertainment, cultural and religious activities will be determined on their income level and demand for these activities. People consume goods and services to satisfy their various needs and wants. Consumption behaviour of people on the above-mentioned activities will rely on their spending ability or purchasing power. Furthermore, as evident in past research studies, these household expenditure patterns can differ according to the socio-economic and demographic factors.

Further to the findings by research studies of the household income and expenditure survey (HIES) on leisure activities in American countries, Chacón-Araya and Crow (2015) applied the models of descriptive statistics, hypothesis testing and standard error. Purpose was to examine the household income and expenditure patterns in leisure activities in Costa Rica, using primary data of 5,200 urban and rural houses. Finally, it was identified that the expenses associated to recreational and leisure activities were slightly higher for people who were in the lowest and highest income quantiles since 1988. However, the scope of the Costa Rican study can be further extended to analyse the consumer's expenditure compared to the other international surveys. The extent to which these surveys vary as far as revenue and expenditure are concerned need to be analysed, in order to determine the consumer price index.

Lima et al. (2017b) analysed the data gathered through the Portuguese household budget survey. The survey was based on the models of multivariate regression, logistic regression, linear regression and binary logistic regression to examine the comparison of leisure expenditure patterns between low- and high-income levels of Portuguese households. In addition, the survey aimed to discover the factors that affect the household leisure and tourism expenditure patterns. Moreover, Kostakis et al. (2014) analyse the various demographic, socio-economic and psychological characteristics affecting people's expenditures on recreational activities in Greece households. The study has been conducted using a dataset comprising of 800 customers in Athens from 2010 to 2011. This research revealed that a strong relationship exists between demographic, socio-economic and psychological factors in Greece household expenditure patterns in terms of recreational activities. The observational outcomes of the study proposed that recreational expenses are impacted by people's income.

In addition, multiple logistic regression used by Kakinami et al. (2018) analyses the relationship between income and leisure time physical activities considering the person's overall non-leisure time physical activities and socio-demographic characteristics. The results indicate that there is the known relationship between lower socio-economic status and lower leisure time physical activities. Also, the findings of this study are more reliable to the less active utilitarian lifestyles, and hence, is one of the most key limitations in this research study.

Another research study provides insights on how the Canadian households spend their dollars on the recreational activities. It has been conducted using datasets from 1982 family expenditure survey and 1999 survey of household spending (Kremarik 2002). This research study by Kremarik (2002) mainly focuses on the households and differences between various types of households. It indicates that average household expenditure on home entertainment equipment have risen by 19% during 1982-1999. More households tend to buy similar equipment in 1999, than in 1982. Additionally, this research study shows that expenditure on cablevision more than doubled, hence, grew by 253% during 1982-1999. In conclusion, this research study indicates that in the modern era with state-of-the-art electronic equipment, the way people expend on recreational activities has changed. Overall, people tend to spend more leisure time with the television, computer etc.

Considering the Asian countries, researchers believe that the income and expenditure patterns of Asians are different from those of other regions in the world. China is one of the largest economies in the world and therefore, income and expenditure patterns of Chinese differ from those of other countries. According to the research conducted by Chen et al. (2018) revealed that people's intellectual, social, mastery of skills and stimulus abstinence scores are found to be at a high level. In addition, these researchers discovered important changes among gender, marital status and education level in leisure motivation. Chen et al. (2018) have identified the reasons behind the selection of Chinese to engage in or exclude from several activities. In addition, the way in which the residents' age, gender, marital status, level of education and income level are associated with their leisure activities. Furthermore, this study provides an opportunity to conduct further in-depth analysis on leisure motivations.

In Turkey, Uraz (2008) revealed about Turkish people's behaviour on the same subject area. The study applied the multivariate TOBIT analysis. According to the findings, it was found that in Turkey, age of the head of the household, household size and consumption, level of education and household location are the most important factors with regard to their expenditure on recreational and cultural activities.

Haq et al. (2018) point out that the probability of household's contribution to leisure and tourism are increased by the income, level of education and women's empowerment. Similarly, household spending on tourism is influenced positively by the age of the head of the household and influenced negatively by the number of children and adults. This study was carried out in Pakistan by examining the impact of participation of households and the socio-economic determinants on entertainment and tourism. One of the significant factors is that empowered women spend more on recreation and tourism. The key role of Pakistani females involving in monetary administration at the family unit level can be a reason behind this outcome. Therefore, this matter can be further examined to obtain a wider analysis of this situation.

Particularly in a Sri Lankan context, it occurs contrary to the popular belief of illegal beverage consumption. According to the research conducted by Jayathilaka et al. (2015), Sri Lanka has been segregated into three sectors such as urban, rural and estate. Therefore, this study explains that mainly a positive relationship is noticeable when considering poverty and illegal beverage consumption. Thus, the impact of its consequences are negative. Another finding of this study emphasises that alcohol and illegal beverage consumption is higher in households under the category of non-poor, but these are above the poverty line. The probit model was deployed to measure the poverty and non-poverty. In order to increase the quality of the household living, complementary socio-economic measures are needed to be implemented.

Table 1 represents some of variables related to the past research studies on recreational, cultural and leisure activities.

Table 1: Common variables used to explain recreational activities and poverty

Variables	Research Paper
Age	(Aitken et al. 2008; Bille 2008; KIm and So 2014; Kostakis et al. 2014; García 2016; Mansury and Cho 2016 ; Lima et al. 2017a; Chen et al. 2018; Haq et al. 2018)
Gender	(Kostakis et al. 2014; Bircan Bodur and Mukiyen Avci 2016; García 2016; Mansury and Cho 2016 ; Lima et al. 2017a)
Level of education	(Uraz 2008; Kostakis et al. 2014; Chacón-Araya and Crow 2015; Bircan Bodur and Mukiyen Avci 2016; García 2016; Mansury and Cho 2016 ; Lima et al. 2017a; Chen et al. 2018; Haq et al. 2018)
Place of residence	(Uraz 2008; Lima et al. 2017a; Haq et al. 2018)
Women empowerment	(Haq et al. 2018)
Ownership	(Chacón-Araya and Crow 2015; Lima et al. 2017a)
Income	(Bille 2008; Uraz 2008; Kostakis et al. 2014; Chacón-Araya and Crow 2015; García 2016; Lima et al. 2017a; Kakinami et al. 2018)
Marital status	(Uraz 2008; Kostakis et al. 2014; García 2016; Lima et al. 2017a; Chen et al. 2018)
No of children	(Aitken et al. 2008; García 2016; Mansury and Cho 2016 ; Lima et al. 2017a; Haq et al. 2018)
Recreational activities	(Abercrombie et al. 2008; Aitken et al. 2008; Chacón-Araya and Crow 2015; Chen et al. 2018; Haq et al. 2018; Kakinami et al. 2018; Kostakis et al. 2014; Kremarik 2002; Zheng and Zhang 2013)
Marital status	(Uraz 2008; Kostakis et al. 2014; García 2016; Lima et al. 2017a; Chen et al. 2018)

Source: Created by authors based on literature.

Even though extensive research has been conducted on recreational, cultural and leisure activities, according to available information, to date no systematic study has been conducted to measure the impact of recreational activities on poverty. In general, a wide range of literature reviewed above has focused distinctively on aspects of recreational activities or poverty. Thus, measuring the combined impact of recreational activities and poverty has not been under a systematic study in a Sri Lankan context. Therefore, there is a need to contribute to this empirical gap, by adding new findings to existing literature.

The contribution of this article differs from previous studies in a number of ways. Firstly, as mentioned above, this study is the first of this kind to quantitatively measure the association between recreational activities and the poverty level of a household. Secondly, both the marginal effects of the various household characteristics and recreational activities associated with the level of poverty presented in this study would be valuable inputs for policy analysis. This can assist especially, to devise policy issues associated with leisure and entertainment sector. Thirdly, despite lack of rational research findings of people's income and their expenditure on leisure demographically, these factors do influence the success of business decisions. In order to make decisions on business matters of future trends of the Sri Lankan economy, in-depth studying of people's purchasing power on leisure activities is important for stakeholders in the Sri Lankan economy.

Methodology

Data

The main data source of this study is the HIES conducted by the DCS of Sri Lanka. The HIES provides information about households' income and expenditure in order to assess the living conditions of Sri Lankan households. The study focuses on the latest survey in 2016 (the survey field work was conducted between January and December 2016) which covered 21,756 households in the entire 25 districts in the country.

Conceptual model and analytical tool

The factors affecting the households' consumption on recreational, entertainment, cultural and religious activities depend on their income level and demand for these activities. People consume goods and services to satisfy their various needs and wants. People's consumption behaviour on these activities rely on their spending purchasing power. Furthermore, based on the evidences in past research studies, these household expenditure patterns can differ according to the socio-economic and demographic factors.

Research on the domain analysis includes countries such as the US, Europe, Australia and further analysis were conducted on the expenditure patterns of the households. Furthermore, analysis of various factors affecting expenditure on recreational activities such as socio-economic status, gender, age and family structure were conducted. By analysing data, the expenditure patterns were identified through categorising the households based on the family structure.

Based on the literature, the variables that are related to the household expenditure on recreational, entertainment, cultural and religious activities such as age, gender, house ownership, level of education were identified. Figure 1 illustrates the conceptual framework. It indicates that poverty depends on income, expenditure and other socio-economic variables as well as the expenditure on recreational and leisure activities.

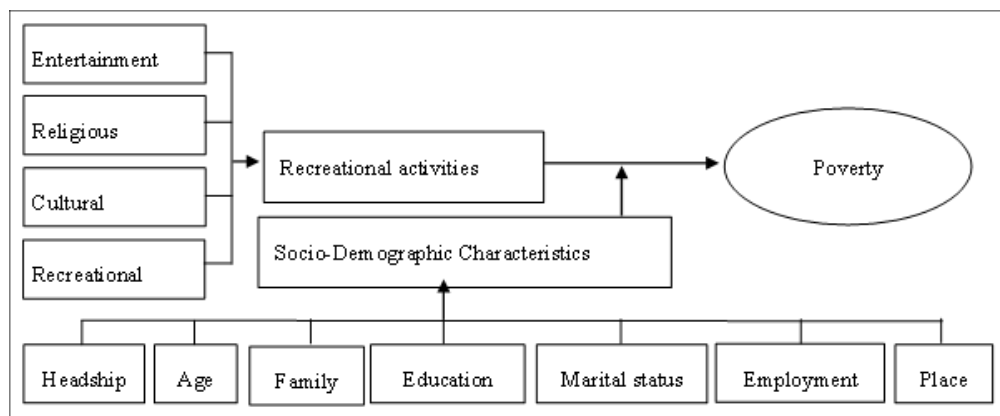


Figure 1: Conceptual framework

Source: Authors' compilation based on literature review.

This study proposes to estimate the likelihood of being in the category of poor or non-poor. Based on the type of recreational activities and socio-demographic factors, the probit model would be much appropriate to use in this study. The probit model is a one with linear probability which has parameters that reflect changes in the likelihood of being in a non-poor

household to changes in the explanatory variables. The model takes the form (Studenmund 2016; Jayathilaka et al. 2015):

$$p_i = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{z_i} e^{-s^2/2} ds \quad (1)$$

where:

P_i = the probability that the dummy variable $D_i = 1$ for poor, 0 for others

$$Z_i = \Phi^{-1}(P_i) = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \dots + \beta_n X_{ni} \quad (2)$$

s = a standardised normal variable

where, Φ^{-1} is the inverse of the normal cumulative distribution function. The probit model is typically estimated by applying the maximum likelihood techniques to the model, in the form of equation (1). However, the results are presented in the format of equation (2).

The probit model with a dummy dependent variable takes the value 1 if the household is poor and 0 otherwise. In Sri Lanka, people who are living below the national poverty line (SLRs. 4,166 per month in year 2016) are defined as poor¹ and the rest as non-poor. Other set of explanatory variables are described in the following formula.

$$P(\text{Poor} = 1) = Z_i(\beta_0 + \beta_1 \text{Male_HH} + \beta_2 \text{Age_HH} + \beta_3 \text{Older} + \beta_4 \text{Education_HH} + \beta_5 \text{Marital_Status_HH} + \beta_6 \text{Employee_Status_HH} + \beta_7 \text{Urban} + \beta_8 \text{Rural} + \beta_9 \text{Entertainment} + \beta_{10} \text{Religious} + \beta_{11} \text{Cultural} + \beta_{12} \text{Cultural} + \beta_{13} \text{Recreational}) \quad (3)$$

In this empirical specification, the decision on which variables to include is based on the exploratory analysis. Based on past studies, certain possible explanatory variables are expected to have an effect on household poverty in the context of Sri Lanka. As such, Table 2 includes variables regarding socio-demographic, and recreational activities. The forward stepwise regression technique is employed to select the significant variables. Subsequently, the goodness-of-fit of the models is evaluated. This is based on an overall goodness-of-fit statistic developed by Ben-Akiva and Lerman (1985). Therefore, the model with the highest goodness-of-fit value will be selected for analysis of this study. Finally, as suggested by Swets (1979) and Swets and Picket (1992), Receiver Operating Characteristic (ROC) curve is generated to evaluate the sensitivity and specificity of diagnostic procedures of the final model.

Table 2 Description of independent variables

Variables*	Description
<i>Socio-Demographic Characteristics</i>	
Male_HH	1= Male head household, 0= Female headed household
Age_HH	Household head's age (years)
Older	% ratio of members in the family who are above 65years old
Education_HH	Household head's education level (years)
Marital Status_HH	1 if household head married and 0 otherwise

¹ This study uses the Cost of Basic Needs (CBN) approach to compute the poverty line.

Employee Status_HH	1 = Engage in economic activity and 0 = Retired, Unable to work or seeking for jobs.
Location	
Urban	1 = Urban sector and 0 = Rural and Estate
Rural	1 = Rural sector and 0 = Urban and Estate
Estate	Base location
Recreational Activities	
Entertainment	Per capita household real expenses on entertainment activities
Religious	Per capita household real expenses on religious activities
Cultural	Per capita household real expenses on cultural activities
Recreational	Per capita household real expenses on recreational activities
Note: *HH - Household head.	

Results and Discussion

For estimate purposes, firstly, the study uses the probit model as described in Section 3. Data used for the estimation include 732 poor households and 21,024 non-poor households in Sri Lanka. A forward stepwise technique² was adopted for the variable selection in each specification. Twelve different model diagnostic criteria were considered in assessing the reliability of results. The forward stepwise methodology suggested that adding variables did not change the significance of existing variables. In addition, the variance inflation factor (VIF) was calculated and found to be low, confirming that multicollinearity is not a constraint. Table 3 presents the estimation results of the final probit model. Marginal effects were calculated separately to interpret substantive effects of independent variables. A goodness-of-fit statistic, the adjusted log likelihood index ratio, Receiver Operating Characteristic (ROC) and the number of observations are also depicted in Table 3.

Table 3 Probit model Estimation results, Sri Lanka

Variables	Estimates	Robust SE	Marginal effect (in percentage)
Constant	-0.9984	0.1368	
Socio-Demographic Characteristics			
Male_HH	0.05074	0.0522	0.0985
Age_HH	-0.00198	0.0018	-0.0040
% Older (above 65)	0.03398	0.0642	0.0697
Education_HH	-0.51250***	0.0709	-0.1861
Marital Status_HH	0.20743***	0.0532	0.3632
Employee Status_HH	-0.05085*	0.0484	-0.1042
Location			
Urban	-0.57333***	0.0945	-0.7528
Rural	-0.17288***	0.0735	-0.3941
Recreational Activities			
Entertainment	-0.00179***	0.0002	-0.0036
Religious	-0.00029**	0.0001	-0.0006

² New variables for selection with p-value <0.15 and previously selected variables for removal with p-value ≥0.20.

Cultural	-0.00140***	0.0004	-0.0028
Recreational	-0.00137***	0.0005	-0.0028
Number of observations =	21756		
Pseudo R ²	= 0.0889		
Log likelihood	= -2917.645		
Area under ROC curve	= 0.7518		

Notes: ***, ** and * are significant at the 0.01, 0.05 and 0.1 level respectively. HH – Head of the Household.

The area under the ROC curve presented in Figure 2 is found to be 0.7518, Thus, it can be inferred that the estimated probit model fits aptly to explain the link between expenditure of different types of recreational activities and poverty.

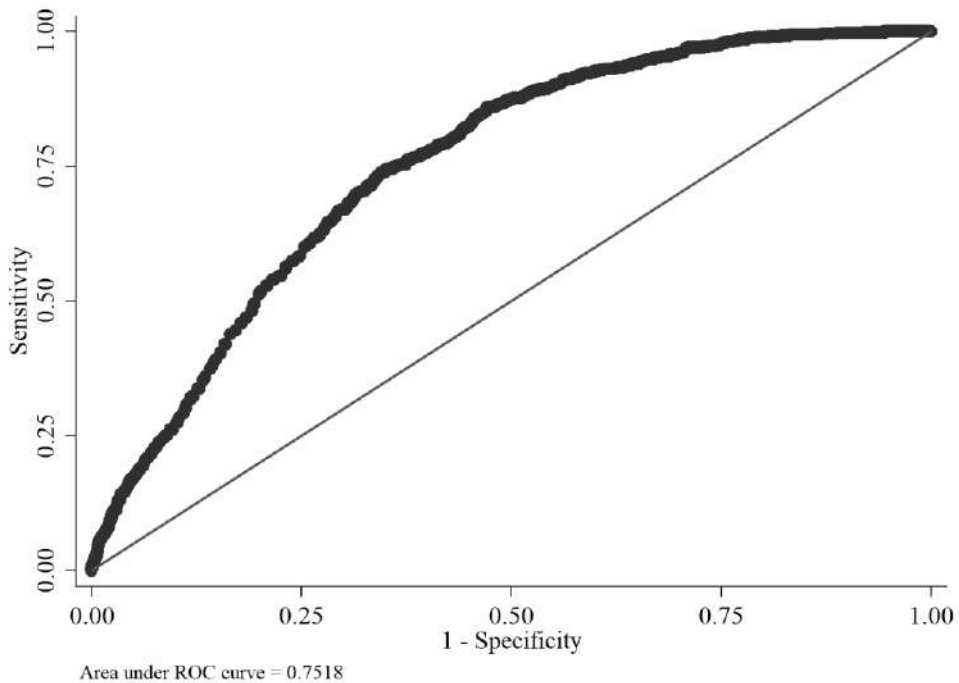


Figure 2: ROC curve of the twelve model

The 45-degree line indicates how a model with no covariates makes the trade-off between sensitivity and 1-specificity (sensitivity). The curved line (ROC curve) is derived from the last model with covariates (Jayathilaka and Keembiyahetti 2009). Any given point on this line indicates the probability of accurately predicting the poor households against that of non-poor households. For example, if sensitivity = 0.75 (probability of correctly predicting a poor household is 0.75), then specificity = 0.65 (probability of correctly predicting a non-poor households 0.65). Here, the specificity number is derived from the fact that when sensitivity = 0.75, then 1-specificity = 0.35 and as such, specificity = 0.65. The area under the ROC curve in this case is 0.7512. Hence, the study might infer that the twelve model fits more efficiently to explain the impact of different types of recreation activities on poverty.

Further to Table 3, the estimated coefficient of the socio-economic and demographic variables indicate the age of the head of the household, level of education and employment status of the head of the household have a negative effect on being poor. On the contrary, the male head of the household and marital status of the head of the household has a positive effect on being poor. The marginal effect emphasises that every 1% increase in proportion of elderly people in the household, would increase the probability of being in a poor household by 0.62 percent in points. Furthermore, if the head of the household engages in economic activity, employment status indicates that the likelihood of being in a poor household will decrease by 0.104 percent points.

Moreover, in Table 3, the marginal effects emphasise that in an increase in the number of married head of households, the probability of being in a poor household would increase 0.363 percentage in points. Furthermore, on the contrary, 1% increase in head of household's level of education by one year will decrease the probability of being in a poor household by 1.86% in points. It can be noted from Table 3, the highest proportion of poor (75.3%) live in the urban sector compared to those living in the rural sector. This indicates that about 25% of households in the urban sector and 60% of rural households are non-poor. It is important to note that the level of education of the household head is a key factor when considering of alleviating the incidence of poverty. The findings reveal that marginal effect of the level of education of the household head shows that the probability of being poor will decrease by 0.23% in points whereas the marital status of the head of the household shows that the probability of being in a poor household will decrease by 0.12%.

The coefficient of the types of the recreational activities reveals that entertainment, religious, recreational and cultural activities are significantly related with the poor and non-poor households. The marginal effect indicates that spending on entertainment, religious, recreational and cultural activities decrease the probability of being poor by 0.004, 0.001, 0.0028 and 0.0029 percentage points, respectively. Considering the signs of the marginal values of the recreational activities, overall, it is clear that non-poor households are positively associated with recreational activities. These observations also confirm the fact that, despite being classified as non-poor by definition, the non-poor households' behaviour in terms of the expenditure on recreational activities are dissimilar to that of the poor households.

Conclusions and Recommendations

The main objective of this study was to measure the impact of various types of recreational activities on poverty. The findings of the probit analysis demonstrated that spending on recreational activities is significantly associated with non-poor households. Accordingly, a relationship exists between spending on recreational activities and non-poor households. Furthermore, the households who are located in the rural sector have a higher probability of being poor compared to those living in the urban sector. This study further confirms that education and the marital status of the head of the household are significantly associated with poverty alleviation. Therefore, this research study provides the opportunity to both the investors and policy makers (targeting the social sector including leisure and entertainment industries, including cultural and religious activities), to further investigate on non-poor households and their impact on recreational activities.

Based on the findings and limitation of the study, researchers identified certain areas that will be helpful for future researchers. This research study mainly focused on how the head of the household reserve their monthly income on recreational activities. However, the scope of the study can be extended to identify the reasons the head of the households spends for selected

recreational activities. Thus, it can be recommended that future researches can be carried out an in-depth analysis district wise.

It can be recommended that in-depth studying of people's purchasing power on leisure activities is an important factor for stakeholders in the Sri Lankan economy. Moreover, according to the study conducted by Lima et al. (2017b) regarding the determinants of leisure expenditure revealed results relevant to the government. With that said, it emphasised on how the evaluation of policy measures are likely to affect the distribution of household expenditure across alternative uses. The policy implications and decision making on business matters can consider future trends of the Sri Lankan economy. In addition, the need for intervention has been considered in order to upgrade the low-income families through allocations of their scarce resources. Awareness of the behaviour of households regarding expenditure on leisure and tourism activities is of great importance. Thus, it could be the basis for national policy making to curtail restrictions on leisure and tourism, thereby to expand the benefits to economically marginalised households.

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