

INEQUALITIES AND TOURISM CONSUMPTION BEHAVIOUR: A MIXTURE MODEL ANALYSIS

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ABSTRACT : The criticism of income as a measure of well-being and trends in living standards is well known and recently scholars have been involved in defining measures to better assess material well-being and differences in living standards. Recent evidence shows that individuals improve their well-being significantly if they are able to spend on higher-order goods and services like tourism and leisure activities. In the light of that, our study proposes to explore differences in living standards in Italy by analysing the distribution of tourism expenditure. For this aim, Mixtures of Regression Models were used in order to investigate whether there is an unobserved heterogeneity in tourism consumption by identifying the presence of groups of families with similar tourism consumption behaviour as function of some socio-demographic and economic factors. The analysis shows that tourism has not become part of the lifestyle of Italians yet.

KEYWORDS: Tourism expenditure distribution, Mixture models, Consumption inequality, Living standards.

1 Introduction

The criticism of income as a measure of well-being and trends in living standards is well known and recently scholars have been involved in defining measures to better assess material well-being and differences in living standards.

Although, researchers agree that an adequate level of income is necessary for a satisfactory level of well-being, it is only a partial or rough measure of such a complex concept (see e.g. Easterlin, 1999). For developed and modern societies – which are more consumption driven than production-led, conventional measures of income inequality may also fail to capture trends in the inequality of well-being which may be better captured by measuring consumption inequality.

There are two main reasons why the study of consumer expenditure for categories of goods may be a better way of documenting inequalities in living

standards. Firstly, it is agreed that if income increases it would be expected that the budget share of such basic needs like food would fall and the budget share of luxury goods like leisure would rise. This change in favour of luxury goods indirectly reflects an improvement in living standards. Secondly, since the rich spend proportionally more on non-basic needs like leisure than the less well-off, this implies a greater concentration of luxury expenditure by income class, reflecting a heterogeneity in consumption behaviour. So, measuring consumption inequality enables us to identify differences in lifestyle.

In the light of these considerations, our study proposes to explore differences in living standards by analysing the distribution of tourism – a luxury good. There is evidence that individuals improve their well-being significantly if they are able to spend on higher-order goods and services like tourism and leisure activities (Cracolici et al, 2013; Hill and Martin, 2012). Through participation in tourism and leisure activities, people build social relationships, feel positive emotions, acquire additional skills and knowledge, and consequently improve their subjective well-being (Dolnicar et al, 2011; Bernini et al., 2013). Furthermore, a recent study by Bernini and Cracolici (2015) on tourism micro-demand showed that tourism has not become a basic need for all but it is still a luxury good accessible only to relatively few (Bernini & Cracolici, 2015). The persistence of inequality in tourism expenditure indirectly reflects differences in standards of living, and thus social inequality.

Our study aims to enrich the analysis of well-being inequality by focusing on the distribution of tourism expenditure. The analysis has been performed on data from the Italian Households Budget Survey. To explore whether there are differences in living standards among Italian households, we propose an analysis of tourism expenditure distribution by means of mixtures of regression models. Mixture models (McLachlan and Peel, 2000) enables us to investigate whether there is an unobserved heterogeneity in tourism consumption by identifying the presence of groups of families with similar tourism consumption behaviour as function of some socio-demographic and economic factors. We employ the mixture of regression models (Grün and Leisch, 2007, 2008) to describe patterns of Italian household tourism consumption distribution for the year 2007. The information criteria are used to assess the number of clusters in the distributions. Evidence shows that tourism expenditure tends to cluster around more than one point, where one of the clusters is naturally defined as the group of families that do not spend for tourism. This gives good reason to model the shapes by a finite mixture density with an appropriate choice of components which represent homogeneous sub-populations. Effects of social and demographic factors on the probability of households to belong to one of the components of the mixture are identified by a compositional data analysis.

2 The research strategy

The empirical analysis has been performed on the data from the Households Budget Survey (HBS), carried out by the Italian Office of Statistics (ISTAT). A sample of

24,400 households was collected in 2007. With regard to tourism, HBS observes the monthly total amount of expenditure of the household on trips for personal purposes. Following the international standards, HBS records, both for national and international trips, expenditure on holiday, leisure and recreation, visiting friends and relatives, health treatment, religious activity and pilgrimages, etc. We use ‘tourism expenditure’ below to refer to expenditure on trips for personal purposes. The respondent is a member of the household, usually the householder, who reports the tourism expenditure of all members of the family. Data on expenditure is supplemented by a rich set of economic, demographic, and sociological variables on Italian households.

On this data, we have applied mixtures of Gaussian regression models

$$f(y | \mathbf{x}; \theta) = \sum_{i=1}^k \pi_i f_i(y | \mathbf{x}; \theta_i)$$

where k denotes the number of groups, generally unknown, y denotes the tourism expenditure and \mathbf{x} is a vector of predictors, $\pi_1, \pi_2, \dots, \pi_k$ are the positive weights of the mixture components that satisfy $\sum_{i=1}^k \pi_i = 1$ and $f_i(y | \mathbf{x}; \theta_i)$ are the component densities of linear regression models with Gaussian errors. We have considered a large set of predictors, and we have tested their significance in a stepwise selection strategy. The model has been fitted in R by using the package `flexmix`. The optimal number of clusters has been selected by the Bayesian Information Criterion (BIC) in a set of candidate models with k ranging from 1 to 6. According to BIC the best model consists of $k=4$ groups, where the first cluster, denoted as the component ‘0’, is defined in semisupervised strategy by considering the families with zero expenditures on tourism, and the other clusters are characterized by different behavior with respect to the tourism expenditure and its affecting socio-demographic and economic factors.

3 The research strategy

The estimate of mixture models show that there are significant differences in tourism consumption behaviour among Italian households. Specifically three groups of families have been identified (see Figure 1). People with the lowest mean expenditure (representing 32% of the total families with a positive tourism expenditure) spend their holiday mainly in the summer and make a domestic trip; the choice to go on holiday is weakly affected by income. The second group (50% of households) shows a tourism expenditure four times greater than the first one. Income affects positively the decision to spend on tourism, and its effect is higher for retired and working people. Furthermore, expenditure reduces as the family size increases. The third group (17% of households) involves households with the highest tourism spending. These people have for a large part an international holiday, which is realized across all the seasons. Being retired or unemployed strongly reduces the tourism consumption.

The analysis suggests that tourism has not become part of the lifestyle of Italians yet. It also shows that consumption behaviour in tourism is affected by both

economic constraints and household characteristics. Differences in tourism consumption among the groups reflect inequalities in living standards.

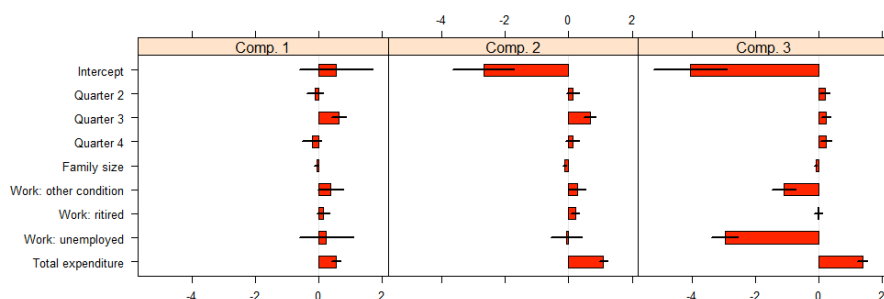


Figure 1. Moel estimates. The plot shows the regression coefficient estimates (red boxes) and their confidence intervals at 95% (black lines) separately by group.

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