

## Comparing single and joint preferences:

### A choice experiment on residential location in three-member households

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#### Abstract

There is growing evidence indicating that there can be significant differences between choices made by single individuals and those made by the same individuals when choosing collectively. This study investigates the dissimilarities between individual and joint decision-making in the context of residential location choice. It is widely recognized that household location choices involve several members of a household with heterogeneous preferences and influence. Nonetheless, little is known about group decision-making processes in practice. In particular, there is only scant evidence on how preferences differ among family members and to what extent individual preferences can be aggregated to achieve an approximation of joint choices. The paper addresses the issue of heterogeneity in single members' preferences, compares *ex ante* single preferences and *ex post* joint choice outcomes, and quantifies the implicit bias generated by relying on the representative member approach. A set of hypotheses is tested via a two-stage conjoint choice experiment administered to a sample of 78 Italian families. The main novelty of the paper relates to the extension of the dyadic interaction approach to consider the role of adolescents in household decision-making.

**Keywords:** unitary household, stated choice experiments, residential location, agent interaction, discrete choice models, MNL, MXL

**JEL:** D12, C83, C35, D79

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## 1 Introduction

Residential mobility modelling is an integral part of urban planning where household locations determine demand for community facilities and services – including transportation systems. Agent interaction within families has, with few exceptions, been considered irrelevant when studying group decisions. Study assumptions have often used the representative member hypothesis to operationalize theoretical models. Along these lines empirical studies, employing stated preference (SP) techniques to analyse group behaviour, have generally ignored potentially important issues inherent to multi-person choices. Not considering the “appropriate” unit of analysis generates biased welfare estimates and erroneous policy decisions especially when adopting the representative member hypothesis that implies gathering information from a single individual (Adamowicz et al., 2005; Molin et al., 1999). Recent studies have questioned the practice of treating group preferences as coincident with those of single members: this should be tested rather than assumed. There is clear evidence of both preference differences between family members and dissimilarities between choices made individually and jointly (Bateman and Munro, 2005; Beharry-Borg et al., 2009; Dosman and Adamowicz, 2006; Hensher et al., 2008). This paper investigates the differences between distinct household member-types (i.e. Adolescent, Wife, Husband), and their joint choices (Family) of residential location by formulating three hypotheses.

First, we investigate *preference heterogeneity* among family member-types by testing the null that they all have the same preference-structure for each attribute. Second, we check the *representative member hypothesis* by testing the null that joint household decisions can be correctly represented by the average family preferences (*pooled model*). Third, we verify the *representative member hypothesis* by testing the null that any single member-type can be used to represent the preferences of the family. We use scale-free WTP/WTA measures both to test the hypotheses reported above as well as to quantify the bias implied by choosing the “wrong” survey subjects.

A two-stage conjoint SP experiment is administered to elicit preferences. Each member is first interviewed singularly and, subsequently, all members are interviewed jointly. A novel extension of

dyadic (i.e. Wife-Husband) interaction is provided by explicitly considering the role adolescents play in household residential choice.

The paper is organized as follows. Section 2 reviews the literature on household decisions. Section 3 describes the base model of group choices and enunciates the hypotheses tested. Data and sample description are reported in section 4. Econometric results are presented in section 5 and section 6 concludes.