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The positionality of goods and the positional concern's origin

Martin Leites Analía Rivero Gonzalo Salas[‡]

Abstract

We conducted a survey-experimental on a sample of Uruguayan youth to understand what goods are positional, the degree of positional concern, and possible explanations for them. The individual's degree of positional concern was assessed by asking participants to make a series of choices between hypothetical societies characterized by varying absolute and relative income and consumption levels. We use randomized information treatments to prime participants into competing narratives regarding (i) the goods, (ii) gender, and (iii) sources of inequality in society. The main findings are: (1) the visibility of the goods would not be a necessary condition for their positionality: jewelry, cars, and health insurance are positional goods and; (2) relative income matters; (3) the positional concern is heterogeneous at the individuals level with a bimodal distribution: one group of individuals has a high prevalence of relative concern, while the other is positional-neutral; (4) there are no differences by gender in any case; and (5) individuals are less likely to report positional concerns when differences in income come from effort and inheritance.

Keywords: positional goods, visibility, meritocracy, questionnaire-experiments
JEL Code: D63, D64, D81 C13, C91

Resumen

Realizamos una encuesta experimental en una muestra de jóvenes uruguayos para entender qué bienes son posicionales, el grado de preocupación posicional y posibles explicaciones para ello. El grado de preocupación posicional de los individuos fue evaluado mediante una serie de elecciones entre sociedades hipotéticas caracterizadas por variaciones en los niveles absolutos y relativos del ingreso y el consumo. Utilizamos tratamientos de información aleatorizados para activar en los participantes narrativas en competencia sobre (i) los bienes, (ii) el género, y (iii) las fuentes de desigualdad en la sociedad. Los principales hallazgos son: (1) la visibilidad de los bienes no sería una condición necesaria para su carácter posicional: las joyas, los automóviles y el seguro de salud son bienes posicionales; (2) el ingreso relativo importa; (3) la preocupación posicional es heterogénea a nivel individual con una distribución bimodal: un grupo de individuos tiene una alta prevalencia de preocupación relativa, mientras que el otro es neutral en cuanto a lo posicional; (4) no existen diferencias por género; y (5) los individuos son menos propensos a reportar preocupaciones posicionales cuando las diferencias de ingreso se deben al esfuerzo y la herencia.

Palabras clave: bienes posicionales, visibilidad, meritocracia, cuestionario experimental
Código JEL: D63, D64, D81 C13, C91

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1 Introduction

The idea that relative or positional concern is a key factor in understanding both individual behavior and well-being has been a long-standing issue in the social sciences. Relative concern models predict that individual preferences are interdependent, meaning that an individual's well-being and decisions are not made in isolation but rather arise from interactions with income or consumption decisions made by others and may be driven by non-pecuniary influences (Veblen, 1994; Duesenberry, 1967; Frank, 1985).[1] Extensive empirical evidence shows that relative income and consumption are important determinants of individual behavior and well-being. This evidence is consistent with several theoretical explanations. However, findings are still limited and questions remain regarding: the characteristics of goods that motivate positional concern (what types of goods are relevant to positional consumption?); the extent to which individuals care about others' consumption, and the differences in positional concern between individuals (how much do we care about other's consumption? who is more likely to make relative comparisons?); and the drivers of positional concern (why do individuals engage in relative comparisons?). This study contributes to answering these questions by testing three hypotheses suggested by previous literature within a unified and coherent framework.

Our first hypothesis postulates that the positionality of high-visibility goods' is higher than that of low-visibility goods, and both are lower than the relative degree of income concern. This hypothesis is grounded in the literature on the attributes of positional goods – items with values that depend on how they compare with items owned by others (Frank, 1985; Hirsch, 1976). Theoretical models and previous evidence support the idea of desirability and socio-cultural visibility (for a review Heffetz and Frank (2011)). There is less evidence to explain why, in certain contexts, the consumption of one good is positional while others are not. Our second hypothesis states that the degree of positionality is an individual attribute. In this case, we assess how persistent an individual's positional parameter is when he/she presents a high relative income concern. This hypothesis is inspired by literature that suggests that positional social arrangements induce individuals to compete and make relative comparisons (Hopkins, 2008). In this case, the formation of preferences and the adoption of cultural norms lead to people presenting heterogeneity in the degree of positionality (Bisin and Verdier, 2011). The third hypothesis focuses on the drivers of individual positional concern. On the one hand, based on evolutionary approaches, we posit that men exhibit greater positional concern than women. On the other hand, we investigate whether the origins of inequality are a significant driver of the variability in the degree of positional parameters between individuals. This line of questioning is motivated by the idea that relative concerns can be strongly influenced by a desire for fairness and an aversion to inequality (Clark and D'Ambrosio, 2015; Fehr and Schmidt, 2003).

Testing for the importance of relative income/consumption for individual well-being, as well as why (and when) individuals are willing to sacrifice absolute income/consumption for a higher relative position, is

[1] Some models assume that individuals value relative standing because it is a direct argument in their utility function. In this case, relative standing directly affects individuals' well-being. Other models assume that relative standing could have an instrumental value. For instance, consuming certain goods could be seen as a sign of high status that the individuals then use to obtain other advantages. Both models provide foundations to explain relevant externalities yielded by the interdependence of individuals' decisions with well-established welfare consequences (Frank et al., 2005; Frank, 1985). Complete reviews of more recent literature on the well-being implications of relative or positional concern can be found in Weiss and Fershtman (1998); Postlewaite (1998); Heffetz and Frank (2011).

a challenging endeavor for several reasons. On the one hand, measuring the positional parameters with direct questionnaires and understanding their main drivers requires making restrictive assumptions. On the other hand, since alternative foundations have been proposed in the literature to explain relative or positional concerns, it is difficult to identify the competing mechanisms. In order to address these issues, we employed survey-experimental methods on a sample of over 900 young people in Montevideo to elicit their degree of positional concern with respect to income and consumption. Participants were recruited through the Longitudinal Welfare Study in Uruguay (ELBU) and come from different socioeconomic levels. Beshears et al. (2008) and Amiel et al. (2015) argue that experimental surveys are useful strategies to measure agents' norms, values, and goals.

Our questionnaire-experimental design was adapted from Alpizar et al. (2005) and Amiel and Cowell (1992). We elicited the degree of individual positional concern by asking participants to choose between hypothetical societies characterized by varying absolute and relative income/consumption levels. Participants were asked to choose among five pairs of societies in which they would prefer their grandchild to live. The different pairs of societies are characterized by different average levels of consumption and grandchild consumption expenditure levels, allowing for a trade-off between an individual's absolute and relative consumption expenditure. We manipulated the information about hypothetical scenarios considering three goods with different characteristics: cars (high visibility and high use value), jewelry (high visibility and low use value), and health insurance (low visibility and high use value). As a benchmark, we also used the degree of positionality of income (low visibility and determinant of consumption capacity). This allowed us to provide new evidence on which goods are positional and compare their degree of positionality with the relative income concern parameters. If relative income concern is partly driven by inequality aversion, the difference between the parameters of the positionality of the goods and the income provides a lower bound of the positional concern associated with the consumption of goods.

Additionally, we explore the heterogeneity of positional concern by gender and within individuals for different types of goods. To advance our understanding of the drivers of a positional concern, we introduce two information treatments that have not yet been explored in the context of the relative income/relative consumption experimental survey. First, to test for gender differences in the positionality parameter, a random sample of respondents was asked about their granddaughter's or grandson's situation. Then, following Bergolo et al. (2022), we carried out the relative income experiment with an additional information treatment for the origin of the grandchild's income: effort or inheritance. Both treatments - the *effort-message* and the *inheritance-message* - allow us to test the sensitivity of the positionality parameter to individual beliefs about the role of meritocracy. As a result, this treatment allows us to assess whether the respondents' marginal degree of income positionality is elastic to the notion of fairness.

Our survey collects data about socioeconomic and demographic characteristics and includes questions regarding respondents' social backgrounds, opinions, attitudes, and preferences. We also include a series of questions used in economics to measure interpersonal comparison and compare the individual positional parameter elicited by the experimental survey with the individual alternative measures based on direct questions. This allows us to assess the consistency between both measures.

Regarding the first research question, our results show that despite their differences, jewelry, cars, and

health insurance are highly positional goods. The marginal degree of positionality for these goods for the median respondent belongs to the interval [0.75, 1), and depending on the specification, the estimates of the mean are around 0.82 - 0.90, 0.85 - 0.92, and 0.76 - 0.91 respectively. In all estimated models, the average marginal degree of the positionality of the goods –cars, jewelry, and health insurance– is between 19% and 36% higher than the positionality of income (the differences are statistically significant at 1%). The evidence for our second hypothesis is in line with previous findings. Our relative income experiment survey confirms that most individuals care about their relative income: the marginal degree of positionality for income for the median participant belongs to the interval [0.5, 0.75), and the estimate of the mean is around 0.6. This means that, on average, an increase in personal income generates more utility due to the increase in their relative income than an increase in the absolute income (around 50%). Additionally, our results suggest that the degree of positionality is an individual attribute and shows a strong heterogeneity of positional concern at the individual level. The distribution of the marginal degree of positionality is bimodal for the selected goods and income, with one group having a high prevalence of relative concern in all goods and the other being positional-neutral. Finally, we explore the drivers of positionality concerns to address the third hypothesis. We reject the presence of significant differences by gender. Additionally, our study reveals that individuals are less likely to report positional concerns when inequality/position comes from effort and inheritance. This result suggests that positional parameters incorporate inequality aversion and are sensitive to individuals' sense of fairness.

This study contributes to the literature on positional concerns. There is considerable evidence about individual relative concern from the different corpus of literature as empirical studies of expenditure (Agarwal et al., 2021; De Giorgi et al., 2020; Chai et al., 2019; Bertrand and Morse, 2016; Kaus, 2013; Charles et al., 2009), natural and field experiments (Dannenberg et al., 2022; Cullen and Perez-Truglia, 2022; Perez-Truglia, 2020; Bursztyn et al., 2018; Kuhn et al., 2011), happiness (Perez-Truglia, 2020; Clark and D'Ambrosio, 2015; Clark et al., 2008; Ferrer-i Carbonell, 2005), lab experiments (Fehr and Schmidt, 2003), and experimental surveys in which participants choose between hypothetical situations (Carlsson et al., 2010, 2009, 2007; Alpizar et al., 2005). This paper directly relates to this latter group of studies. Alpizar et al. (2005) investigate the relevance of an individual's absolute and relative position in income and consumption of particular goods. They find that cars are more positional than leisure and insurance. Additional studies by Carlsson and other coauthors on other countries and samples conclude that the degree of positional concern varies between societies (Carlsson et al., 2010, 2009, 2007).

We use a unified framework to accurately measure positional concerns in different dimensions among a diverse sample of young people and assess whether individuals' positional concern is consistent for goods with different characteristics. We confirm that positionality is an individual attribute, and a high relative income concern is associated with high positionality in consuming a set of goods. This paper offers new insights into the drivers of positional concern. Our results suggest that positional concerns may be motivated by ideas of fairness. Finally, the high degree of positionality found for these goods holds when we discount the maximum potential effect of income inequality aversion.

Indirectly, these results relate to the literature that has explored the drivers of inequality aversion (Bergolo et al., 2022; Almås et al., 2020; Cappelen et al., 2020; Carlsson et al., 2005). Previous research has examined how people's attitudes toward inequality change when they acquire information regarding the source

of income inequality. However, the degree to which inequality aversion is sensitive to the inheritance of income is scarcely studied. Using randomized experiments, Bastani and Waldenström (2021) and Fisman et al. (2020) (for Sweden and for the United States, respectively), found that individuals prefer a higher tax rate for wealth when the source of wealth is inheritance. We build on this literature by using an alternative strategy that combines the experimental-questionnaire approach with information treatments in order to test whether inequality aversion responds differentially to inheritance and effort. Our findings suggest that positional concern, driven by inequality aversion, is significantly lower when inequality is perceived to result from effort and inheritance. A novel result is that inheritance tends to be perceived as merit. Consequently, we find that participants are more tolerant of inequalities generated by transfers from the effort of previous generations than when the source of income inequality is unknown and they decide based on their prior beliefs. The origin of this difference could be related to the fact that this study measures aversion to inequality rather than preferences for tax rates. Furthermore, in the context of our experimental questionnaire, a grandchild's inheritance could be perceived as the result of the effort of the participant. This evidence suggests why there is no support for imposing high inheritance tax rates, which generally have marginal weight.

Our study is also related to the literature on the attributes of positional goods. Evidence provided by Heffetz (2018, 2011) supports the idea that socio-cultural visibility is a relevant characteristic of positional goods. It is not driven by 'objective' observability but depends on the cultural and social value each society or socioeconomic group assigns to holding certain goods and the associated expenditure. Most papers use visibility surveys that focus on the noticeability of the average spending of a list of goods (Heffetz, 2018; Kaus, 2013; Khamis et al., 2012; Heffetz, 2011; Charles et al., 2009; Chao and Schor, 1998). Heffetz (2018) expands the notion of visibility and concludes that spending on some goods generates different positive/negative impressions conditionally on being noticed. Alves et al. (2022), use data collected in a field experiment and a survey sample of youngsters and suggest that not all socially valued goods present high social visibility.

We confirm a high positionality for high visibility and luxury goods, in line with the previous findings by Heffetz (2018, 2012); Charles et al. (2009); Alpizar et al. (2005). Unlike Alpizar et al. (2005), a high positionality is confirmed for a low visibility-good like health insurance – the magnitude of the positional parameter is two times higher in our study. As for Alves et al. (2022), our results suggest that positional concern is not directly associated with the social visibility of expenditures.

The contribution of this study is related to the previous literature that explores differences in psychological attributes and traits by gender (Bertrand, 2011). Contrary to what some evolutionary approaches suggest, the various tests carried out reject the existence of differences in degrees of positionality based on gender.

Finally, this paper provides some methodological contributions to studies that make use of experimental questionnaires to elicit behavioral parameters (Carlsson et al., 2010, 2009, 2007; Alpizar et al., 2005). First, this paper suggests that these instruments are useful for a sample of non-university populations. The results are robust for the number of desired children of the respondents and the use of different hypothetical scenarios, such as the sex of the grandchild. To assess the validity of a positionality measure

elicited from an experimental survey, we analyze whether it is correlated with a wide range of self-reported variables related to preferences for status. Additionally, the study takes into consideration the potential consequences of inconsistent responses when determining positionality parameters.

The rest of the paper is organized as follows. Section 2 summarizes the foundation of relative concern and the mechanisms that could explain its origin. Section 3 explains the main details of our experimental design. Section 4 describes the experiment implementation and the information collected. Section 5 reports the main results. In section 6, the validity of our results is discussed. Section 7 concludes.

2 Foundations of positional concern: an organizing framework

The notion that individual decisions are often driven by positional concern is not a new concept (Veblen, 1994; Frank, 1985; Duesenberry, 1967). People derive satisfaction not only from their absolute income but also their relative income position in society or a particular social group. Consumption decisions are not made in isolation from the consumption choices of others. For certain goods, an individual's utility depends not only on their own consumption level but also on the consumption levels of others. Positional concern reflects how individuals care about the consumption or income of others.

The existence of positional concerns is consistent with several theoretical explanations. The possible reasons why people have positional concerns are also diverse. Evolutionary theory provides a strong argument for an innate perspective (Frank et al., 2005; Postlewaite, 1998). It is based on the idea that a higher position in the past increases the possibility of success (and survival) compared to individuals in lower positions. In this case, the relative concern is intrinsic to human behavior motivated by rivalry and interpersonal competence. Hopkins (2008) suggests two other reasons. The concept of status can be viewed as a visible signal sent to society to improve well-being or gain some advantage. This is a consequence of incomplete information or preferences, as the consumption or performance of other individuals becomes relevant for making better decisions. Another explanation is that relative concern arises from current social arrangements, where the nature of institutions and social norms induce individuals to compete and make relative comparisons. Related to the latter explanation, Bisin and Verdier (2011) points out that individuals develop positional preferences through observation, learning, imitation, and by adopting cultural norms. Relative income/consumption concern could be strongly motivated by concerns for fairness and inequality aversion due to fairness motivations (Clark and D'Ambrosio, 2015; Fehr and Schmidt, 2003). In this case, the positional concern is explained by inequality aversion and unfair distribution.

Finally, instrumental motivations can affect relative income/consumption. For instance, consuming certain goods can signal individuals' social status. The relative consumption of these goods might serve as a sign of economic success and could consequently have an instrumental value in power, preferential treatment (or discrimination), or permit the individual to gain access to jobs or prestigious positions. The positional concern could also be explained by imperfect information about prices, wages, and the quality of the goods, particularly as knowledge of others' consumption patterns could provide relevant information about economic status. Another potential source of relative concern emerges when individual preferences are incomplete. The own experience and the experience of others is a fundamental

mechanism to evaluate objects, opportunities, or income (Hopkins, 2008). In this case, through relative comparisons, people shape their preferences. Finally, the concern about the consumption of others could be motivated by the network effect (Heffetz and Frank, 2011).

Information about others' income (consumption) is key to understanding an individual's utility and choices. Since relative concerns imply that an individual's utility could be affected by the income or consumption of others, they could produce externalities.

This interdependence of individual decisions generates externalities with micro and macroeconomic implications. On the one hand, when an individual decides to increase their consumption because they are motivated by positional status, negative externalities are produced for those surrounding them. On the other hand, the competition for status leads to the over-consumption of positional goods (Heffetz and Frank, 2011).

A general formulation of the utility function U of an individual i that incorporates relative concern is as follows:

$$U_i = v_i(x_i^b, R_i(x_i^b, x_{-i}^b)) \tag{1}$$

where x_i^b and $R_i(x_i^b, x_{-i}^b)$ represent the absolute and relative endowment of b (income or certain good). Previous literature uses different functional forms of R_i to model positional concerns. As we explain in more detail in the section 3, we assume a mean-dependence model. Namely, the relative component R_i assumes that individuals compare their income/consumption with the average income of others (van Praag, 2011; Clark and Oswald, 1998, 1996; Abel, 1990; Boskin and Sheshinski, 1978; Duesenberry, 1967).[2] The mean-dependence model incorporates a notion of self-centered inequality aversion because it assumes that individuals care about the differences between their income and that of others (Burone and Leites, 2021; Alpizar et al., 2005; Johansson-Stenman et al., 2002). In this case, the willingness to pay to reduce inequality is centered on the individual's situation in relation to the mean.[3]

To measure positional concern, we follow Alpizar et al. (2005) and use the marginal degree of positionality as:

$$\gamma_i^b = \frac{\frac{\partial v_i}{\partial R_i}\frac{\partial R_i}{\partial x_i^b}}{\frac{\partial v_i}{\partial x_i^b} + \frac{\partial v_i}{\partial R_i}\frac{\partial R_i}{\partial x_i^b}} \tag{2}$$

This ratio compares the change in the utility of a marginal increase in relative income/consumption with the total change in the utility of a marginal increase in income/consumption. Two elements are key

[2]Other authors include relative income concern based on rank (Clark et al., 2009a,b; Robson, 1992; Frank, 1985; Layard, 1980).

[3]Models based on inequality aversion assumes diverse functional form for R_i, for example, including the global inequality (coefficient of variation or Gini index) or the relative affluence or deprivation.Fehr and Schmidt (2003) and Clark and D'Ambrosio (2015) provides a detailed review about inequality aversion models. The inequity aversion model of Fehr and Schmidt (1999) is canonical. Hopkins (2008) demonstrates that mean dependent models are a special case of the social preference model proposed by Fehr and Schmidt (1999).

in equation 2. The first one is that individuals' marginal degree of positionality varies between goods. Hirsch (1976) and Frank (1985) define positional goods as "those things whose value depends relatively strongly on how they compare with things owned by others." We identify x_i^b as a non positional good when $\gamma_i^b = 0$, while x_i^b is a positional good when $\gamma_i^b > 0$.

As mentioned above, our measure of γ_i^b might incorporate a notion of non-self-centered inequality aversion. As a benchmark, we take the degree of positionality of income, γ_i^{income}. We assume that it provides an upper bound for the role of inequality aversion. The gap between γ^b and γ_i^{income} provides a lower bound of positional concern motivated by positional consumption. We identify x_i^b as a consumption positional good when the difference $\gamma_i^b - \gamma_i^{\text{income}}$ is statistically significant and positive.

Second, as with other social preferences, individuals could have different degrees of positional concern between them. γ_i^b is the parameter reflecting how people care about the utility of others. Under this specification, γ may vary between individuals in the same society and for the same endowment x_i^b. Namely, if $\gamma_i^b > \gamma_j^b$, the individual i has more positional concern than j.

Another major point is about the benchmark or the relevant reference group that individuals use to make interpersonal comparisons. It is worth mentioning that an individual may have more than one reference group. Even which goods an individual considers positional may vary according to the relevant reference group in a given context.

As a result, the identification of the relevant reference group is an unobserved variable. As described below in section 3, the experimental survey applied in this paper addresses this empirical problem by assuming a single reference group that does not vary between individuals and different goods. This assumption allows the results of the relative concern to be comparable. However, the experimental design does not reveal which group is relevant for each individual. This limitation should be taken into account when interpreting the results.

3 Experimental design

Testing whether people have positional concerns and why they choose to reduce their absolute income or consumption for more relative income or consumption is not a simple task. Amiel et al. (2015) and Beshears et al. (2008) argue that experimental surveys provide useful information about agents' preferences, norms, values, and goals. To estimate the magnitude of the marginal degree of positionality at the individual level, we implemented an experimental survey with a sample of 951 youngsters aged 18-20 from Uruguay. Unlike most previous studies that relied on a sample of university students, we interviewed the participants face-to-face at their homes during this fieldwork. This difference might reduce the possibility of social desirability bias (Holbrook et al., 2003).

The baseline experimental survey consisted of three sections: (i) the relative consumption experiment; (ii) the relative income experiment; and (iii) a final module that collects information on respondent's socioeconomic status, attitudes, beliefs, goods visibility scales, and self-reported preferences for social status and reference groups.[4] In sections (i) and (ii), the participants were instructed to consider the

[4]The entire Spanish version of the questionnaire is available in https://fcea.udelar.edu.uy/

well-being of their imagined grandchild when making choices, following the approach of Alpizar et al. (2005) and Johansson-Stenman et al. (2002). The participants were presented with pairs of hypothetical societies and had to make five decisions. In section (i), entitled "relative consumption experiment," the pairs of societies were characterized by the consumption of a particular good; while in section (ii), the "relative income experiment," the societies were described by income. In all cases, the participants were given the same baseline instructions and were told which level of income/consumption their grandchild would have and the mean of relative income/consumption in society.

In addition, the study used randomized information treatments to prime participants into competing narratives regarding (a) the goods; (b) sources of inequality in society; and (c) grandchild gender. The goods treatment was carried out in the relative consumption experiment to understand the heterogeneity of positionality between goods. In the relative income experiment, additional information regarding the sources of inequality was introduced (effort or inheritance). Finally, the third treatment was based on the idea that the responses could be sensitive to the gender of the grandchild.

Following previous empirical social choice research, participants made hypothetical choices without real financial incentives. This may raise concerns about the reliability of our questionnaire-based measure of positional concern. Individuals may engage in cheap talk or provide socially desirable answers. They may look more prosocial compared to situations wherein their decisions have a personal cost. However, according to Gaertner and Schokkaert (2012), strategies based on experimental questionnaires provide useful information about agents' norms, values, attitudes, ethical preferences, and goals. Moreover, individuals would provide reliable answers, especially if the tasks performed by participants are not cognitively costless. There could be "mistakes" in the choices by some participants if the questions are particularly difficult to understand; however, it is expected that the majority of participants should try to answer the questions carefully and truthfully if the questionnaires are sufficiently clear and respondents volunteer to participate (Bauer et al., 2020; Larney et al., 2019; Ben-Ner et al., 2008).

3.1 Eliciting positional concern

To elicitate the marginal degree of positionality, we use the ratio comparison utility function in Alpizar et al. (2005). In the basic model, individual i derives utility from their own income/consumption and the ratio between the income/consumption and the average income/consumption of the society in which they live. Note that this strategy assumes that there is a unique and common comparison benchmark. The general formulation of this for an individual i who lives in a society s is:

$$v_{i,s} = \left[x^b_{i,s}\right]^{(1-\gamma^b_i)} \cdot \left[\frac{x^b_{i,s}}{\bar{x}^b_s}\right]^{\gamma^b_i} \tag{3}$$

where $x^b_{i,s}$ is the level of income/consumption of good b corresponding to individual i living in society s, $\bar{x}_s$ is the average income/consumption for society s and γ^b_i is a parameter of the individual degree of positionality regarding the income or the good b. Under this specification, γ_i can be interpreted as

investigacion/proyectos/estudio-longitudinal-de-bienestar-en-uruguay.html.

a marginal degree of positionality, namely the proportion of the total utility variation yields from an increase in the relative consumption (or income) from the last unit of money spent (obtained). In the extreme case where $\gamma_i = 0$, individual i does not care about relative income or consumption. When $\gamma < 0$, individual i obtains utility from relative deprivation, i.e., compassion effect. When $\gamma_i > 0$, individual i is concerned with both the absolute and relative consumption (income) of particular goods. This means that even for a marginal increase in income or consumption, there is an increase in utility due to the absolute and relative effects. For example, if we assume that $\gamma = 0.4$, an increase in individual i's consumption generates an increase in their utility, with 60% of this increase being explained by the absolute component and the remaining 40% being explained by the relative component. It is worth noting that when $\gamma > 1$, an additional dollar provides more utility for relative consumption (income) than for absolute consumption (income).

Consider a hypothetical choice between two societies, A and C. Both societies are identical –including the level of inequality, the availability of goods and services, and the same prices and quality– except for their average income/consumption and the grandchild's income/consumption. If we assume the individual utility function defined equation 3, only when the following equality holds an individual is indifferent between these two societies:

$$v_{i,A} = \left[x^b_{i,A}\right]^{(1-\gamma^b_i)} \left[\frac{x^b_{i,A}}{\bar{x}^b_A}\right]^{\gamma^b_i} = \left[x^b_{i,C}\right]^{(1-\gamma^b_i)} \left[\frac{x^b_{i,C}}{\bar{x}^b_C}\right]^{\gamma^b_i} = v_{i,C} \tag{4}$$

From the indifference condition in equation (4), we know that:

$$\widehat{\gamma}^b_i = \frac{\log(x^b_{i,C}/x^b_{i,A})}{\log(\bar{x}^b_C/\bar{x}^b_A)} \tag{5}$$

This equation establishes a clear trade-off between individuals' income/consumption and average income/consumption in a society. This means that for i to be indifferent between societies A and C, a decrease in relative position may be compensated by some additional absolute income/consumption, such that the overall level of utility remains constant. This equation allows us to recover the marginal degree of positionality parameter from individual choices. For example, consider a society A where the individual's income is \$37,500 per month and the average income is \$45,000, while in society C they are \$27,500 and \$30,000 respectively. Holding other things equal, the implied value of γ associated with indifference between the two societies A and C is $\widehat{\gamma}^b_i = \frac{\log(27{,}500/37{,}500)}{\log(30{,}000/45{,}000)} = 0.75$. This implies that when an individual prefers C over A, we know that $\gamma \geq 0.75$, while when she prefers A, $\gamma \leq 0.75$.

The participants made five consecutive choices between a fixed society A and alternative societies C_z. It is worth noting that eliciting the participants' positionality parameters requires their choices (at least) to hold weakly monotonic preferences. Namely once they choose A over C_z, they should not choose C_{z+1} over A again. Furthermore, some participants responded consistently to some of the experimental surveys but were inconsistent in the rest. This generates an additional restriction. We analyze this point in section 4.2.

If we assume that the societies A and C_z are identical in everything, including their levels of inequality, the elicited positionality parameter does not consider non-self-centered inequality aversion. The differences in the relative gap regarding the average individual could motivate aversion to self-centered inequality. This agrees with the positional concern and, as mentioned above, will be considered in interpreting the parameters.

3.2 Experimental design

In the first stage of the experiment, the interviewer reads the instructions, explaining each part. Participants face repeated pairwise choices between hypothetical societies in this experimental survey. They receive information about both societies in a baseline instruction.[5] We define a baseline society A and five alternative societies C_z. The hypothetical societies are characterized by two dimensions that correspond to the arguments of the utility function in equation (3): income/consumption of good b (x_i^b) and average income/consumption of good b in society s ($\bar{x}_s^b$). In all other respects, the instructions explicitly mention that the alternatives are identical in all other respects.

Following the approach of Johansson-Stenman et al. (2002) and Carlsson et al. (2005), the participants were instructed to choose a society that would result in better well-being for their imagined grandchild eighty years from the time of the experiment. This practice is common in survey experiments and aims to eliminate the influence of the respondents' current circumstances or social environment on their decisions. As most of the participants were between 18 and 20 years old at the time of the survey, they were not old enough to have real grandchildren. The assumption underlying this approach is that participants will base their choices on their own preferences or anticipate their imagined grandchild's preferences to be similar to their own (Johansson-Stenman et al., 2002).

The interviewers read the instructions before the first pair-wise choice between A and C_1. Then interviewers show a card with a description of both societies in a comparable way, and they ask participants to choose between both hypothetical societies. The information for each society includes the mean and the grandchild's income/consumption.

For example, if we focus on the relative income experiment, society A is characterized by a grandchild's income of \$35,000 and an average income in the society of $\$45,000$. Each type of C_z society has an average income of $\$30,000$, representing the 67% of the average income reported for society A. The only difference among type C_z societies is the income the grandchild would receive. By changing the grandchild's income and holding the relative income constant, we can elicit bounds for each respondent's marginal degrees of positionality parameter.

Following the example of the relative income experiment, Table A1 in the Appendix describes each of the societies regarding the grandchild's income and the average income (columns 2 and 3). By asking individuals to make repeated pair-wise choices between hypothetical societies with different implicit marginal degrees of positionality (column 4), it is possible to elicit that parameter at the individual level.

[5] The card shown to the participants in the case of the relative income experiment is shown in Figure A1 of the Appendix. The instructions explicitly mention that there are no right or wrong answers. We also told participants that everyone in these societies could cover their basic needs so as to rule out poverty aversion or lexicographic strategies.

The following example illustrates how we identify the lower and upper bounds for γ in the case of the relative income experiment. Let a set of choices be, for instance, $\{C_1, C_2, A, A, A\}$. This implies that $C_2 \succeq A$ and $A \succeq C_z, \forall z > 2$. From the indifference condition in equation (4), we know that $\gamma \geq 0.125$ and $\gamma \leq 0$. The intervals for γ associated with each possible (and consistent) set of choices are reported in Table A1. It is worth noting that if subject i chooses A over C_1, she is choosing to resign part of her income to increase her relative income. We call this type of subject "positional individuals." In any other case, individuals can be defined as positional-neutral.

3.3 Information treatment

The baseline instruction, which is common in all cases, establishes:

> ***Baseline-message:*** *"Next, imagine that 80 years have passed and you have the chance to choose in which society your only grandson/granddaughter will live. Assume that all individuals have their basic needs met in all the societies listed below. There are no wrong or right answers. We ask you to carefully consider your preferred alternative for your grandchild and not the best society in general. You can select between pairs of societies that are identical in all, except..."*

Relative income experiment. The respondents choose among several pairs of hypothetical societies, A and C_z, described by the average income and the grandchild's income.

> ***Baseline-message:*** *"You can select between pairs of societies that are identical in every way, except in your grandson/granddaughter's income and the average income of the other people in the society"*

Relative consumption experiment: treatment goods. To analyze the role of alternative goods on the positional concern, we carried out the experiment of relative consumption. Like Alpizar et al. (2005), the participants choose between two societies that describe the grandchild's consumption and the average consumption of a particular good. In all other aspects, both societies were identical. We use the responses of the experimental-questionnaire approach and strategy mentioned in Section 3.1, where we elicit γ^b for each good b.

By maintaining comparable societies in terms of absolute consumption and relative consumption for a set of goods, the structure of the choices allows us to identify the implied γ^b in the same range of values. This range is also comparable with the relative income experiment.

Our treatment of information is designed to identify if an individual's positional concern is affected by a change in the relative position dimensions –the goods– keeping constant the rest of the conditions. The structure of the experimental questionnaire is identical for all participants. The treatment of information about the change of good is the unique exogenous variation. Since participants are exposed to the same sequence of decisions for a set of goods, we can compare the effect of the good on an individual's marginal degree of positionality at the individual level. This allows us to elicit the individual's marginal degree of positionality for the consumption of four alternative goods and analyze whether there are differences in

the degree of positionality among these goods.

A key step is selecting the good used to measure the degree of positionality. The positional goods must meet at least three essential characteristics: i) the access and consumption of these goods are associated with social recognition, the esteem of others, and success in life. ii) the social visibility of consumption of these goods, a characteristic suggested by the theories of signaling and conspicuous consumption; iii) by definition, the relevance of relative consumption of that good makes no sense in social isolation. It is an inherently spatial-temporal phenomenon (in a social sense) that depends on social interactions and relevant reference groups.

Another criterion for selecting goods was that they allowed some comparability with previous studies using similar strategies. Alpizar et al. (2005), for example, use cars, housing, insurance, and vacation days. Additionally, we incorporate some changes considering the interests and consumer profile of young people in Uruguay. For most young people of this age, it is not expected that they would be interested in buying a house, while it is more plausible that they would be interested in buying a car. For this reason, we consider the second good. The selection of goods considers the visibility index developed by Heffetz (2011), which was applied to the same sample of youngsters in 2015/16 (Leites et al., 2019). We also conducted a series of focus groups before the survey with a similar population of youngsters. Jewelry appeared in the focus groups as a socially visible good associated with a high socioeconomic position and is the most visible good in Heffetz's list. We also include health insurance, which has lower social visibility. Since access to health services is guaranteed for all people in the Uruguayan health system (both with private and public providers), individual health insurance represents extra coverage for specific services or an extension of some rights (for example, different hotel services when people are hospitalized). Access to individual health insurance implies an additional price and is generally associated with those workers with better jobs or families with higher incomes.

In sum, we include three different types of consumption in the experiment: cars (high visibility and high use value), jewelry (high visibility and low use value), and health insurance (low visibility and high use value). The instruction said:

> ***Goods-message:*** "*You can select between pairs of identical societies, except on how much the average spend on [health insurance premiums/Jewelry/cars] and how much your grandson/granddaughter spends for this purpose. Although other people spend more (on average) on [health insurance premiums/jewelry/cars] in society A, their consumption of other goods is the same in both societies. Please choose in which of the societies I show you below your [grandson/granddaughter] will be better off*"

Fairness treatment: effort and inheritance. Following Bergolo et al. (2022), we carried out the relative income experiment, but we included additional information treatment regarding the sources of inequality. The two treatments - *effort-message* and *inheritance-message* - are based on the idea that relative concern and inequality aversion are sensitive to a notion of fairness. This message is shown to the participants immediately after they complete the baseline relative income experiment. The interviewers read the new instructions, and the participants make the sequences of choices between A and C_z with

additional information about the source of inequality. The first group of respondents chooses between hypothetical societies, where their choices determine their grandchild's income and relative income. In this case, the instruction includes an information treatment that reveals that the origin of the grandchild's income is their effort. The second group makes the same choices, but the instruction includes an information treatment establishing that their grandchild's income comes from inheritance. The *effort* and *inheritance* messages are as follows:

> ***Effort-message:*** "*You can select between pairs of societies that are identical in all, except in your grandson/granddaughter's income and the average income of the other people in the society. In addition, you know that your grandchild's income and his/her place in society correspond to his/her lifelong effort relative to the others*"

> ***Inheritance-message:*** "*You can select between pairs of societies that are identical in all, except in your grandson/granddaughter's income and the average income of the other people in the society. In addition, you know that the inheritance mainly explains your grandchild's income he/she received* "

Grandchildren's gender information treatment. To test for gender differences in positionality parameters, a random sample of the respondents is asked about their granddaughter's or grandson's situation. We randomly divide the sample into three groups. A group of participants in our baseline experimental survey does not distinguish the sex of the grandchild. In all cases, the text said grandson/granddaughter. The second group of respondents chooses between hypothetical societies, where their choices determine their grandson's income and relative income. The third group of respondents chooses between hypothetical societies, where their choices determine their granddaughter's income and relative income. In sum, the text said:

> ***Control:*** " *... the chance to choose in which society your only grandson/granddaughter will live"*

> ***Grandson:*** " *... the chance to choose in which society your only grandson will live"*

> ***Granddaughter:*** " *... the chance to choose in which society your only granddaughter will live"*

In both cases, we adapt the text of the rest of the instruction to the grandchild's gender. As we explain 4 we applied these two alternative questionnaires to a sub-sample.

3.4 Hypotheses

Regarding the positionality of the goods, our leading hypotheses for the treatment arms presented in the previous section are:

$$0 < \gamma^{\text{income}} \leq \gamma^{\text{insurance}} \leq \gamma^{\text{visible goods}}; \text{ with visible goods} = \{\text{Cars, Jewelry}\} \qquad \text{(H1-a)}$$

where γ^{income}, $\gamma^{\text{insurance}}$ and $\gamma^{\text{visible goods}}$ represent the value of the positional parameter estimated for the relative income experiment, health insurance experiment, car experiment and, jewelry experiment.

As we discussed above, in our context, the magnitude of the parameter γ^{income} includes the influence of self-centered inequality aversion. Furthermore, although the relative income experiment refers to the capacity to consume, it does not mean making an expenditure. As an additional test to identify the positional concern associated with the consumption, we test a complementary hypothesis (H1-b):

$$\gamma^{\text{goods}} - \gamma^{\text{income}} > 0; \text{ with goods} = \{\text{Cars, Jewelry, Insurance}\} \tag{H1-b}$$

We explore whether the degree of positionality is an individual attribute. To advance in this direction, we assess how persistent individuals' positional parameters are when we consider the relative consumption experiments concerning the relative income experiment. For example, there could be participants for whom the level of income positional concern is low (l) and is not sensitive to the type of goods. Or, individuals could exhibit a high level of positional concern (h), irrespective of whether we consider income/goods. Finally, there could be participants for whom income positional concern is low but high relative consumption concerns. This establishes the hypothesis that those participants with a high degree of income positionality present greater positionality in regard to cars, health insurance, and jewelry. In more formal terms, this implies:

$$F_i(\gamma^{\text{goods}} \mid \gamma_h^{\text{income}}) \geq F_j(\gamma^{\text{goods}} \mid \gamma_l^{\text{income}}) \iff \gamma_h^{\text{income}} > \gamma_l^{\text{income}}; \text{ with goods} = \{\text{Cars, Jewelry, Insurance}\} \tag{H2}$$

where F represents the distribution γ^{goods} of the respondents (i and j) conditional to the values of γ^{income}.

Finally, we explore some drivers of the positional parameter. First, we explore the hypothesis that the degree of positionality varies by own and grandchild's gender. Previous papers document a gender gap in performance when individuals are exposed to alternative competitive environments and consider social status ranking. Differences in the positionality parameter could explain these differences in behavior. We expect that the marginal degree of positionality is lower for females than males and granddaughters than grandsons.

$$\gamma_f^b \leq \gamma_m^b; \text{ with b} = \{\text{Income, Cars, Jewelry, Insurance}\} \tag{H3-a}$$

where γ_f^b and γ_m^b represent the positional parameter for females and males, respectively.

Second, we explore whether the sources of inequality are a relevant driver of the heterogeneity in the degree of positionality parameter across individuals. This analysis is motivated by the idea that the individual's relative income concern is directly related to his/her self-centered inequality aversion. If this is true, we expect that the marginal degree of positionality will be sensitive to the individuals' notion of fairness and their beliefs about the source of inequality. We randomly introduce information about

the differences in the source of relative income to test how positional parameters and fairness relate to each other. The baseline instructions (without additional information) represent the control group. Two additional groups randomly received the two fairness informational treatment: effort and inheritance. The details of this strategy are described in subsection 3.3 and 3.5. Following Bergolo et al. (2022), treatments aim to test the idea that individuals are more likely to accept inequality from the differential effort, while they are more reluctant when it comes from circumstances beyond individual control as an inheritance.

Our leading hypothesis for the *effort-message* arms is:

$$\gamma^{\text{income}-\text{effort}} - \gamma^{\text{income}} < 0 \tag{H3-b}$$

where $\gamma^{\text{income}-\text{effort}}$ and γ^{income} represent the value of the positional parameter estimated for the *effort-message*, and *baseline instructions* respectively.

The *inheritance-message* has two possible opposite effects. On the one hand, inheritance could be perceived by the respondents as a circumstance beyond the individual's control that is obtained without any merit of the heir. On the other hand, inheritance could be perceived as a fair intergenerational transmission explained by parental' effort. While in the first case, the effect of *inheritance-message* implies an increase in the positionality parameter, in the second, it is expected a given these opposite effects, the expected sign of this message is undetermined:

$$\gamma^{\text{income}-\text{inheritance}} - \gamma^{\text{income}} =? \tag{H3-c}$$

where $\gamma^{\text{income}-\text{inheritance}}$ represents the value of the positional parameter estimated for the *inheritance-message* group. Beyond the sign of these hypotheses, the confirmation that the magnitude of the positional parameter is sensitive to a notion of fairness suggests the relevance of self-centered inequality aversion. This reinforces the relevance of testing H1-b to identify the magnitude of the positional effect associated with consumption.

3.5 Econometric specification

This section presents the econometric strategy used to test our hypotheses. In the first step, the aim is to identify what influences the degree of marginal positionality using the information treatment about the goods described in the previous section. Since all participants make the same choices, we compare their choices when considering income and the different types of goods.

As preliminary step, we use a statistical test to assess whether the mean positional parameters by goods are statistically significantly different from zero. This provides a direct test for hypothesis H1-a.

Hypothesis H1-b incorporates as a benchmark the marginal degree of the positionality of income. To test that hypothesis, the main specification is given by the following regression:

$$\vec{\gamma}_i^b = \Gamma(\alpha + \beta^{\text{good}} \cdot D_i^{\text{good}} + \mu_i + \varepsilon_i^b) \tag{6}$$

The outcome variable (γ_i^b) represents the parameter of the marginal degree of positionality recovered from the set of choices of societies A and C_z made by the participants in the several alternatives. For each participant i the vector $\vec{\gamma}_i^b$ contains the γ_i^{income}, $\gamma_i^{\text{jewelry}}$, $\gamma_i^{\text{insurance}}$ and γ_i^{car}. The former was elicited based on equation (5) and relative income experiment responses. The other three parameters were elicited based on equation (5) and the relative consumption experiment. D_i^{good} is a dummy variable indicating whether participant i completes the experiment for the visible and nonvisible good. Finally, Γ is a generic function that models the relationship with γ_i, μ_i is an individual fixed effect, and ε_i^b is an error term. In this case, we also introduce treatment-fixed effects to account for unobserved individual heterogeneity.

In this regression, β^{good} is the coefficient of interest. It represents the effect of the message associated with the good on the degree of marginal positionality. In all cases, the comparison of the parameter of positionality is against the income positionality (the parameter elicited in the relative income experiment when the participants receive the baseline instructions). For example, the case of the β^{jewelry} reflects the extra positionality concerns associated with the jewelry's relative consumption.

Because our empirical strategy only allows us to recover a range for the implied γ for income and each good, our estimation strategy requires further assumptions about its distribution within each interval. Our baseline model estimate equation (6) is based on Random Effect and Fixed Effect model, which assumes that γ is uniformly distributed within each interval.[6] As an alternative, we estimate these equations using maximum likelihood and an interval regressions model. The assumption, in this case, is that γ is distributed normally within each interval. As a complementary strategy, we also report the distribution of frequencies by good taking as reference results provided by the relative income experiment. We use the Kolmogorov-Smirnov test of equality of the two distributions to explore differences in the degree of positionality by type of good.

To test hypothesis H2, we explore the conditioned distribution of γ for each good. We created transition matrices to check whether the individuals' degree of positional concern is sensitive to the relative income and goods' consumption information.[7]

We use some standard persistence and transition rate measures to summarize this information. A persistence index was calculated by summing the unconditioned frequencies of the matrix's main diagonal. As an additional measure, we estimate the share of individuals with γ^{goods} higher than γ^{income} (the cumulative frequency of individuals located in the main diagonal and the cells above the main diagonal). Both summary indices measure the frequency with which the proposed hypothesis is fulfilled but do not allow statistical inference. For this purpose, we use the Kolmogorov-Smirnov test to compare conditional distributions. Given this objective and the number of observations, we conditioned the distribution of each γ^{goods} on two groups according to the magnitude of γ^{income}. The first group considers individuals with low-income positionality ($\gamma^{\text{income}} \leq 0.5$), while the second group considers those with high-income positionality ($\gamma^{\text{income}} \geq 0.5$). Kolmogorov-Smirnov test assesses the hypothesis that γ^{goods} for group 1

[6] For participants who choose society A over C_1, we can only say that $-\infty < \gamma \leq -0.125$. Analogously, for participants who choose C_5 over A, $-\infty > \gamma \geq 1$. For the first group, we use $\gamma = 0$, corresponding to the interval's upper bound. For the second group, we use the sum of the lower bound (1) and the length of the widest interval ($0.25 = 1.25 - 1.00$).

[7] As individuals were exposed to the experimental survey following the same sequence, concerns about potential order effects interpret transition matrices are less clear in this case. This point is addressed in the robustness check section.

(group 2) contains smaller values than for group 2 (group 1). Also, it assesses the null hypothesis of equal conditioned distribution.

Finally, to test hypothesis H3-a and to explore the individual's heterogeneity in the positional degree by sex of the respondents, we adapted the specification of the equation (6). We exclude the fixed effect and incorporate a wide set of control variables. Additionally, we test whether significant differences exist in the γ distribution of income/goods between males and females and those treated with a granddaughter hypothetical scenario versus a grandson hypothetical scenario. We also tested for differences in the distributions. Since the samples were independent, we used the Epps-Singleton test, which performs better than the Kolmogorov-Smirnov test for identifying differences in these distributions.

Unlike our previous hypotheses, our test for H3-b and H3-c compares the income positionality parameter between the control and treatment groups. Our control group is based on the responses of relative income parameters with baseline instruction. The treatment groups are based on the relative income experiment when participants know that inequality is mostly associated with inheritance or a differential lifelong effort. This specification allows us to estimate each treatment arm's effect using the control group as the comparison group. Since the only difference between the two is the additional information shown to the treatment group, our results can be interpreted as the effect of the additional message on the marginal degree of positionality parameter.

$$\gamma_i^{\text{income}} = \Gamma(\alpha + \beta^u \cdot IS_i^u + \delta X_i + \varepsilon_i) \tag{7}$$

In this case, the outcome variable (γ_i^{income}) represents the marginal income degree of positionality. IS_i^u are dummy variables indicating whether the choice of participant i was made, knowing that inequality is mostly associated with inheritance or a differential lifelong effort (u). Note that β^u can be interpreted as the effect of information about the source of inequality on the income concern parameters.

4 Data and Implementation

4.1 Data

The sample used in this experiment comes from a sub-sample of the Longitudinal Welfare Study in Uruguay (*Estudio Longitudinal del Bienestar en Uruguay*, ELBU by its Spanish acronym). ELBU is a survey with four waves, which started in 2004 and interviewed state primary school pupils in their first year. Its objective was to produce information on different socioeconomic dimensions in the context of social crises in Uruguay. The last wave was completed in 2015 - 2016 and from a total sample of 816 ELBU youngsters surveyed in Montevideo (the capital city of Uruguay). For our experiment in 2018, we successfully recontacted and visited 554 of them (Sample A). Rejections or inability to could recontact youngsters (using the address and telephone we had from the survey) explain the difference of 262 who did not join in the experiment to participate. In this sample, we apply the grandchildren's gender information treatment.

We asked the 554 participants to refer a friend willing to participate in the experimental survey. We

obtained contact information and visited 397 of those contacts (Sample B). The difference between the number of ELBU and the new contacts is explained mainly because the referred friend was not available to participate in the experimental survey, and to a smaller extent, because of errors in the contact information provided by the ELBU youngsters. We apply the fairness (effort or inheritance) information treatment in this sample. Additionally, in this sample, we do not apply the hypothetical scenario associated with the car.

This leads to a total sample of 951 youngsters that complete the experimental survey. The questionnaire was completed individually in the respondent's home with the presence of an interviewer. This would avoid contagion effect in the responses. To motivate interviewees to complete the experiment, the participants were offered the chance to win a USD 500 prize. This potential prize is independent of the respondent's choices, and the lottery includes all participants.

4.2 Final samples and randomization groups

In this section, we address two additional concerns regarding our data: the consistency of participants' responses in the experiment and the balance of our information treatment.

It is worth noting that the way in which we elicit individuals' marginal positionality parameter with this strategy implies that –if individuals are rational– once they stop choosing C_z and start choosing A, they should not go back to C_{z+1} ever again (weakly monotonic preferences assumption). The inconsistent responses could be explained by problems of comprehension, low attention, fatigue of the participants, or the restrictive assumption of weakly monotonic preferences and the functional form of the utility function.[8]

If the inconsistent responses are associated with certain participant characteristics, it could yield bias in the estimated parameters. To address this issue, we use alternative criteria of consistent responses and identify alternative groups based on the consistency of responses between experiments. First, the condition we use to define our Baseline Criterion (BC) is to drop respondents' information with inconsistent choice patterns. We also use a more flexible definition of consistent responses, which allows an expansion of the number of responses. We incorporate a simple assumption to recover some responses. Table A3 in the Appendix presents the criteria used to recover these cases (basically, we recover the participants who perform a single inconsistency). This definition is named the Extended Criterion (EC). Table 1 shows the number and distribution of consistent responses by good/income for the two criteria defined and for each sample (A, B, and entire). The proportion of consistent responses is similar between goods and higher when income is considered. There are no differences in the proportion of consistent responses between Samples A and B, either when we use the Baseline or Extended Criterion (Panel I and II), or when we consider the number of experiments in which participants provide consistent responses (Group

[8] Bergolo et al. (2022) use an online experimental survey for university students to elicit inequality aversion parameters. They explore some sources of inconsistent responses and implement a wide range of attention and comprehension checks. They found that female participants were, on average, more likely to be inconsistent than male participants. They suggest that the participants' fatigue is not related to inconsistent responses. They carried out estimates restricting the sample to those who reported having paid attention and answered the comprehension check correctly, and the main results remained essentially the same. Their main results are robust to alternative ways of handling inconsistent responses. Their results remain when they use alternative assumptions about the utility function.

I and Group II).

Because respondents may be consistent in one experiment and not in the others, we identify two groups of responses. The first group includes consistent responses for each experiment. Namely, it includes respondents that make consistent choices for the sequences of at least one of the experiments – for income or each good (Group I). The second group is defined in the most restrictive way: we exclude participants that make inconsistent choices in at least one of the sequences of the experiments – consistent in every goods/income experiment – (Group II). This is a very restrictive group since it excludes information from respondents who were consistent in three of the experiment but inconsistent in a fourth. In this case, we exclude the car because the hypothetical scenario was only applied to Sample A. While Group I focuses on experiments with consistent responses, Group II focuses on the consistency of the participants.

It is pertinent to mention that the final sample of respondents is substantially reduced when we apply the most restrictive criteria. Considering that the experiment was conducted face-to-face, the percentage of inconsistent responses is relatively high in relation to previous similar studies. The most similar paper was Alpizar et al. (2005), which has a 13.5% of inconsistent responses. Some aspects could explain this difference. First, the number of consistent choices in the four choice sequences is higher than in the previous studies (in Alpizar et al. (2005) respondents make 12 choices between hypothetical societies, while in our experiments, they make 20 choices). The levels of consistency are much higher and comparable when we consider each experiment separately. This is particularly the case for income. Most of the previous comparable studies use samples of university students interviewed in the classroom, unlike our study, whose participants are young people with different educational levels interviewed face-to-face at their homes. The results are presented for the four alternatives mentioned to identify whether inconsistent responses generate any bias in our estimates.

Table 1: Different types of consistency for each sample

			Sample		
			A N=554	B N=397	Entire N=951
Panel I. Baseline Criteria (BC) of consistency	**Group I: participants consistent in at least one experiment**				
	Consistent with Income	N	363	260	623
		%	0.655	0.655	0.655
	Consistent with Jewelry	N	231	157	388
		%	0.417	0.394	0.408
	Consistent with Health Insurance	N	274	204	478
		%	0.495	0.514	0.503
	Consistent with Car	N	252	-.-	-.-
		%	0.455	-.-	-.-
	Group II: participants consistent in every experiment †				
	Excluding car	N	112	83	195
		%	0.202	0.209	0.205
	Including car	N	82	-.-	-.-
		%	0.148	-.-	-.-
Panel II. Extended Criterion (EC) of consistency	**Group I: participants consistent in at least one experiment**				
	Consistent with Income	N	459	329	788
		%	0.829	0.829	0.829
	Consistent with Jewelry	N	396	266	662
		%	0.715	0.670	0.696
	Consistent with Health Insurance	N	428	314	742
		%	0.773	0.791	0.780
	Consistent with Car	N	417	-.-	-.-
		%	0.753	-.-	-.-
	Group II: participants consistent in every experiment †				
	Excluding car	N	283	195	478
		%	0.511	0.491	0.503
	Including car	N	239	-.-	-.-
		%	0.431	-.-	-.-

Sample A comprises young people who participate in ELBU, while sample B comprises contacts from friends provided by ELBU's young people. The difference in the number of cases is because the friends were not located or refused to participate in the experiment. The entire sample arises from the sum of samples A and B. † We exclude the car experiment responses in Group II because the relative consumption experiment for this good was only applied to Sample A.

In addition, we have information to evaluate whether the inconsistency of the responses is associated with participant characteristics. The survey includes a set of demographic (sex, age) and socioeconomic variables (household size, employment, education level, emancipation – young people who live in a different house from their parents –, and parental educational achievement). Table 2 presents the mean for these variables in Group I (jewelry, health insurance, and income) and Group II (always consistent) with the alternative consistency criteria (BC and EC). Results suggest that consistent and inconsistent groups are generally balanced in observable characteristics, and particularly when the sample size increases and the entire sample and the extended criterion are considered. The only significant differences appear when considering young people emancipated from their home of origin in Group II and male and educational level in Group II with Baseline Criterion. In Table A4 of Appendix, we show the mean of Sample A with Group I. In this case, we include the γ parameter of the car and test the difference between this mean and the mean of the other goods and income. In these cases, also we did not find significant differences.

Table 2: Mean of demographic and socioeconomic variables. Different samples and consistency criteria. Entire sample

	Group I						Group II		
	Jewelry	Insurance	Income	p-value			Yes	No	p-value
	(1)	(2)	(3)	(1) vs. (2)	(1) vs. (3)	(2) vs. (3)	(4)	(5)	(4) vs. (5)
I. Baseline Criterion									
Age	20.53	20.36	20.38	0.146	0.242	0.853	20.48	20.41	0.666
Male	0.517	0.488	0.488	0.409	0.373	0.986	0.559	0.457	0.011
Emancipated	0.181	0.178	0.176	0.919	0.829	0.908	0.221	0.146	0.012
Household size	3.974	3.827	3.851	0.209	0.271	0.817	3.840	3.923	0.525
Work (1=Yes)	0.386	0.419	0.415	0.322	0.371	0.874	0.426	0.398	0.478
< 10 years of education	0.342	0.300	0.277	0.187	0.029	0.408	0.349	0.279	0.053
II. Extended Criterion									
Age	20.50	20.41	20.41	0.408	0.419	0.982	20.51	20.35	0.233
Male	0.478	0.475	0.484	0.910	0.818	0.722	0.491	0.465	0.434
Emancipated	0.182	0.160	0.172	0.266	0.616	0.519	0.189	0.133	0.019
Household size	3.912	3.906	3.880	0.866	0.653	0.773	3.866	3.953	0.435
Work (1=Yes)	0.395	0.402	0.417	0.781	0.398	0.562	0.404	0.403	0.979
< 10 years of education	0.311	0.291	0.290	0.411	0.364	0.939	0.319	0.268	0.105

Descriptive statistics based on the entire sample of participants (Sample A + Sample B: N=951). The Baseline Criterion includes responses with strict consistency, while the Extended Criterion uses a more flexible definition of consistency, adding responses with only one inconsistency to the sequence of responses. Group I considers the sample of responses that are consistent in each good, while Group II considers the sample of participants that provide consistent responses across all goods.

Finally, Tables A6 and A7 in the Appendix allow us to compare the balance in the characteristics between participants assigned to different information treatment groups. In general, results confirm that the randomized groups are also balanced in observable characteristics. Our treatment arms thus identify the causal effect of this information treatment on the magnitude of the parameter of marginal positionality (γ).

5 Main results

5.1 Baseline estimate for positional concern

This section reports the average marginal degree of positionality (γ) for income and the aforementioned three goods. Table 3 shows results based on the two alternative notions of consistency of individuals' responses: Baseline and Extended Criterion. Also, we present the results for the two groups of respondents: participants' responses were consistent in at least one experiment (Group I); responses of participants that made consistent choices in the four sequences of the experiments (Group II). Results show that the marginal degree of the positionality of income is between 0.55 and 0.65, depending on the criteria used to define the consistency. The average degree of positionality is also positive and of greater magnitude than income for health insurance (0.76 - 0.91), jewelry (0.82 - 0.90), and car (0.85 - 0.92). As is expected, the average magnitude is slightly higher when considering the extended criterion. A means test was conducted to check whether the differences were statistically significant. In all cases, the t-student test of equality of the average marginal degree of positionality between income and goods is rejected at a 1% significance level. The magnitude of the average marginal degree of positionality for the three selected goods is very close.

Table 3: Average marginal degree of positionality. Entire sample

	I. Baseline Criterion				**II.** Extended Criterion			
	Group I		Group II		Group I		Group II	
	γ	N	γ	N	γ	N	γ	N
Health Insurance	0.82	478	0.76	195	0.91	742	0.91	478
Jewelry	0.82	388	0.83	195	0.90	662	0.90	478
Car†	0.85	252	0.88	82	0.90	417	0.92	239
Income	0.63	623	0.55	195	0.65	788	0.62	478
T-test with consistent case: $\gamma^{\text{goods}} - \gamma^{\text{income}} = 0$								
Good: Health Insurance			3.843				8.626	
Good: Jewelry			5.111				8.274	
Good: Car (Sample A)			4.100				6.524	

The Baseline Criterion includes responses with strict consistency, while the Extended Criterion uses a more flexible definition of consistency, adding responses with only one inconsistency to the sequence of responses. Group I considers the sample of responses that are consistent in each good, while Group II considers the sample of participants that provide consistent responses across all goods. † The hypothetical scenario of the cars was only presented to sample A. Therefore, consistency refers to that population.

A more demanding strategy to test the H1-b hypothesis is presented in Table 4, which reports the results of our parametric estimates for both criteria. Columns (1) and (2) report the Random Effect model, Columns (3) and (4) report the Fixed Effect model, while (6) and (7) report the estimates based on Interval Regressions. In columns (1), (2), (6), and (7), we include a set of control variables. These controls are a set of individual characteristics of the participants (demographic and socioeconomic background). In each case, we report the results for all cases (Group I) and the results based on consistent responses across all goods/income experiments (Group II).

Our preferred specification is reported in Columns 3 and 4 because we control for the influence of unobservable variables at the individual level. As a result, these specifications capture the variation in γ^{goods} and γ^{income} at the individual level and report the average difference. They support a more causal interpretation of our results.[9] In the specifications, we omit the γ of the income. Among other things, the Fixed Effect allows us to approximate the magnitude of this γ with greater precision using the coefficient of the constant. In this sense, estimates based on this last model confirm a positive and statistically significant marginal degree of the positionality of income, and its magnitude is around 0.60 (constant coefficient). The effect of selected goods is statistically significant at the 1% significance level, and their signs are positive. According to this parameter, the positionality of jewelry is between 22% and 30% higher than the positionality of income. Similar results are obtained for cars (23% and 26%) and health insurance (20% and 27%). The differences observed when comparing the marginal degree of positionality parameter of jewelry and income are similar in magnitude to the differences observed when comparing health insurance and income, and cars and income, respectively.

The estimation of the income positionality parameter using the constant coefficient is less precise in the Random Effect model (Columns 1 and 2) and Interval Regression (Columns 5 and 6). Although the coefficient is positive, it is not always significant. Its magnitude varies considerably since it captures unobservable or omitted information. However, the coefficients for the goods treatment are consistently

[9] A limitation to this interpretation could be the order effect. However, the type of questionnaire, the sequence of choices, and the tests performed suggest this would not be a very relevant problem in this context. A more formal empirical analysis of the potential effects of response order is presented in Section 6.

positive across different specifications and criteria, indicating that unobservable characteristics of the goods explain some of the differences in individuals' positionality. In all models, the treatment effects for all goods are statistically significant at the 1% significance level and have the expected sign. The coefficients of the interval regression model (Columns 5 and 6) are much larger than those of the other models because this estimation is more sensitive to extreme values in the distribution. When we exclude observations at both extremes of the distribution in the interval regression, the coefficients have a magnitude comparable to those of the other models. We will present this result in Section 6.

Table 4: γ estimation. Different Specifications and consistency criteria

	Random Effect		Fixed Effect		Int. Reg.	
I. Baseline Criterion						
Omitted variable: Income						
Health Insurance	0.205***	0.221***	0.212***	0.222***	0.527***	0.769***
	(0.032)	(0.056)	(0.037)	(0.056)	(0.084)	(0.215)
Jewelry	0.205***	0.298***	0.222***	0.298***	0.542***	1.132***
	(0.035)	(0.055)	(0.039)	(0.055)	(0.091)	(0.224)
Car	0.222***		0.234***		0.549***	
	(0.038)		(0.041)		(0.108)	
Constant	1.166***	0.214	0.614***	0.539***	2.328	-1.562
	(0.404)	(2.207)	(0.020)	(0.034)	(1.519)	(8.315)
Observations	1,638	561	1,638	561	1,638	561
R2	0.062	0.089	0.062	0.089	-.-	-.-
II. Extended Criterion						
Omitted variable: Income						
Health Insurance	0.266***	0.282***	0.267***	0.282***	1.003***	1.138***
	(0.026)	(0.034)	(0.028)	(0.034)	(0.105)	(0.152)
Jewelry	0.247***	0.283***	0.251***	0.283***	0.947***	1.166***
	(0.029)	(0.035)	(0.030)	(0.035)	(0.109)	(0.153)
Car	0.252***		0.250***		0.912***	
	(0.032)		(0.033)		(0.129)	
Constant	1.113***	0.730*	0.645***	0.621***	3.444*	3.078
	(0.318)	(0.424)	(0.017)	(0.021)	(2.017)	(2.928)
Observations	2,436	1,350	2,436	1,350	2,436	1,350
R2	0.077	0.099	0.078	0.099	-.-	-.-
Group	I	II	I	II	I	II
Controls	Yes	Yes	No	No	Yes	Yes

The covariates included as controls are: age; age squared; sex (1=female); household size; if the young person left the home of origin (1=Yes); years of education (1=<10 years of education); and labor condition based on two dummy variables (work between 30 and 40 hours a week, and work more than 40 hours a week). Additionally, we include a dummy variable that identifies whether the young person belongs to sample A or B. *Significant at 10%, **significant at 5%, ***significant at 1%. Standard errors are in parentheses.

Indeed, results for our sample of Uruguayan youngsters are comparable with evidence for students from Costa Rica reached by Alpizar et al. (2005). The results in the Appendix in Figure A2 show that the average γ for income and each good are similar. However, in our case, the magnitudes are a bit higher.[10]

One novel finding of our results is that although health insurance is not socially visible, its marginal degree of positionality is relatively high and comparable in magnitude with the degree found for cars and jewelry. In addition, its magnitude is two times higher than the positionality of insurance reported by Alpizar et al. (2005). This result suggests that positional concern is not directly associated with the social

[10]Note that the list of goods of both studies is not entirely comparable, and the intervals represented by the societies in both questionnaires are not the same. In particular, there is an overlap for some intervals, but our experimental survey includes a greater number of intervals. Furthermore, in the relative consumption experiment by Alpizar et al. (2005), participants are asked to choose among three pairs of societies, while in the case of the relative income experiment, they choose between seven pairs of societies. In our case, participants chose between five pairs of societies in all cases.

visibility of expenditures. We found three possible interpretations to explain the relatively high degree of the positionality of Health Insurance. First, it could be associated with status-seeking behavior, given that access to prime health insurance could be associated with higher wealth and successful life. Second, health may be perceived as a merit good and motivate higher relative consumption. Third, it could be related to the information effect. In this case, the participants could perceive the relative expenditure on health services as a signal of their grandchild's health and the quality of access to health care services. Although it is beyond the scope of this paper to provide evidence about these hypotheses, we explore whether the magnitude of $\gamma^{\text{insurance}}$ is related to their employment status, the relevance of health in their lives, and the respondents' assessment of public health insurance. Table A8 in the Appendix presents the average marginal degree of positionality for alternative samples, criteria, and groups. It shows that respondents who negatively evaluate public health insurance, who are not employed (less likely to have access to private insurance), and those who assign low priority to health have a higher positionality in health insurance. These results are consistent with the three arguments put forward to explain the high value of $\gamma^{\text{insurance}}$. However, significant differences are only confirmed when we consider differences in the respondents' employment status. The lack of significance in the rest of the tests may be due to the low power derived from the low number of observations. Therefore, based on this evidence, we cannot rule out that the difference is motivated by the search for the status of non-employees.

Our results are consistent with hypothesis H1-a, although they reject the difference. The effects are consistently positive across the different specifications, consistency criteria, groups, and samples, showing a greater average degree of positionality for jewelry, health insurance, and cars. These results are consistent with hypothesis H1-b.

5.2 It is the positionality and individual's attribute?

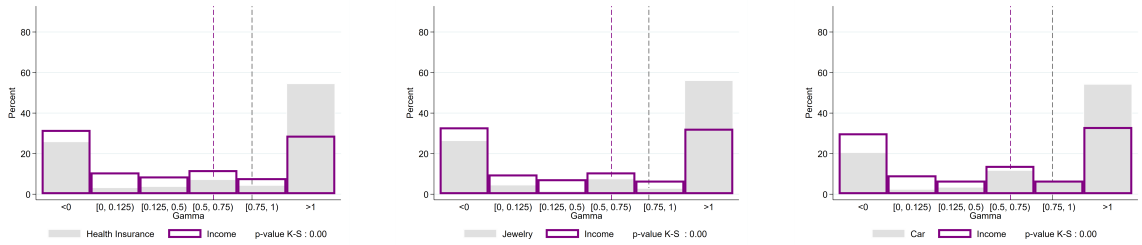
The previous section focused on the average results, and in this section, we will delve deeper into the distributions to explore the existence of heterogeneities between individuals. Figure 1 shows the γ^{income} distribution for the set of experiments. Panels (a), (b), and (c) compare the distribution of γ^{income} with the distribution of $\gamma^{\text{insurance}}$, γ^{jewelry} and γ^{car} respectively. Figure A3 in the Appendix presents the analogous results for the Extended Criterion. On the *x-axis* we report the implied value of $\gamma^{\text{income}}/\gamma^{\text{good}}$ associated with different alternative choices of A and C_z and on the *y-axis* we report the frequency of $\gamma^{\text{income}}/\gamma^{\text{good}}$ associated with each sequence. The dashed line indicates our estimate for the mean $\gamma^{\text{income}}/\gamma^{\text{good}}$.

The distribution of γ^{income} reveals several findings. First, for most subjects, relative income matters: the marginal degree of positionality for income for the median participant belongs to the interval $[0.5, 0.75)$, and the estimate of the mean is around 0.6. This means that, on average, an increase of \$1 in subjects' income generates more utility via the increase in their relative income than it does an increase in the absolute income. Second, the γ^{income} distribution is bimodal and forms a U-shaped curve. This functional form accords with previous findings in the literature (see, for instance, Alpizar et al. (2005)). Third, it is also worth noting that between 26% and 32% of the participants consider income not a positional good. Finally, between 38% and 42% of participants present a $\gamma^{\text{income}} \geq 0.5$. They could be identified defined as extremely positional subjects.

Figure 1 confirms the same U-shape pattern for the marginal degree of positionality for health insurance,

jewelry, and cars. The results reported in panels (a), (b), and (c) are powerful: changing the hypothetical scenario from the income to the consumption of the selected goods noticeably shifts the distribution of the marginal degree of positional parameter toward the right concerning the distribution of γ^{income}. The three goods accumulate more than 50% of the frequencies in the range $\gamma^{\text{goods}} \geq 1$, suggesting that most participants are highly positional concerning these goods. In the opposite extreme, between 20% and 24% of the participants (depending on the good) are located in the range $\gamma^{\text{goods}} \leq 0$, namely, they are positional-neutral. These levels are higher than the frequency obtained for income (between 26% - 38%). The K-S test of equality of the two distributions is rejected at a 1% significance level in all cases. These results remain when we use the Extended Criterion (see Figure A3 in the Appendix) and confirm the previous conclusion regarding the hypotheses H2.

Figure 1: Marginal degree of positionality distribution - alternatives goods. Baseline Criterion



(a) Health Insurance **(b)** Jewelry **(c)** Cars

This figure displays the distribution of γ estimated using the Baseline Criterion in each case. In the *x-axis*, we report the implied value of γ associated with different choices of A and C_z. On the *y-axis*, we report the frequency of γ associated with each good and income. The dot-dashed line represents our estimate for the mean using OLS regression of γ over a constant. p-values Kolmogorov-Smirnov tests for equal distribution are presented in each graph.

An interesting point is whether the degree of the positionality of each individual persists for income and different goods. Our baseline H2-a establishes that those individuals with higher income positional concerns have a higher marginal degree of positionality for the analyzed goods. An alternative hypothesis is that respondents have high positionality for income but not for cars, jewelry, or health insurance. To address this hypothesis, we analyze transition matrices of the individual marginal degrees of positionality in the context of our within-individual experiment. The transition matrix describes the individual's probability of a change from one state, the range of γ^{income} to another state, γ^{good}. We also explore the individuals' γ^{good} transition between the selected goods.

In panels (a), (b), and (c) of Figure 2, the y-axis represents the range of γ^{income} and the x-axis represent the range of $\gamma^{\text{insurance}}$, γ^{jewelry} and γ^{car}. The diagonal of the matrix represents the persistence of subjects in each of the six ranges of γ for the income and set of goods considered. Namely, respondents with the same range of γ for the two endowments considered in the matrix. When we use the Baseline criterion of consistency, the persistence indexes are 31%, 31%, and 37% for jewelry, health insurance, and cars, respectively (see the first row and three columns in Table 5). The result is similar when the extended criterion is used (Cols. 3, 4, and 5 in Table 5). In other words, many participants have the same positionality level for income and goods analyzed.

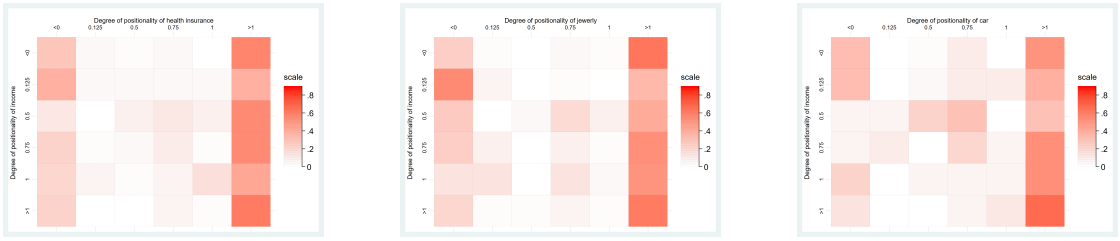
Overall, the dynamics of the positional parameter are consistent with our previous analysis. The bimodal

distribution is confirmed, with a high concentration at the extremes of the matrix diagonal. A significant proportion of respondents have a high degree of positionality for all goods and income. And a smaller percentage is positional-neutral for the goods analyzed. However, the consistency in positionality between income and goods is not perfect. The degree of the positionality of the goods (x-axis) tends to be higher when the positionality of income is higher. Additionally, the shares of respondents that present an equal or higher γ^{good} than γ^{income} are 73%, 77%, and 80% for jewelry, health insurance, and cars, respectively (see the second row and the first three columns in Table 5). This confirms what the matrices suggested and implies that the most frequent alternative in these samples is consistent with hypothesis H2.

K-S tests were conducted to check whether the differences in conditional distribution are statistically significant. To construct the conditional distributions, we divided the responses into two groups: low-income positionality individuals (when $\gamma^{\text{income}} \leq 0.5$); high-income positionality individuals (when $\gamma^{\text{income}} > 0.5$). Then we explore the γ^{goods} distribution for each group. The results are summarized in the last three rows of Table 5). We find favorable evidence for hypothesis H2-a in the cases of health insurance and cars. In the case of cars, the tests reject that the distributions of both these groups are equal and that the magnitude of γ^{car} is smaller for the group of low-income positionality individuals than for the groups of high-income positionality individuals. These results are confirmed for Baseline Criterion (Col. 3) and the Extended Criterion (Col. 6). The same conclusion is reached for hypothesis H2-a for health insurance. However, the weaker significance is only confirmed for the Extended Criterion. This could be associated with the sample size. Although these results are consistent with our hypothesis, it is worth emphasizing the limits of this exercise. As individuals were exposed to alternative consumption and relative income experiments with the same sequence, concerns about potential order effects led us to consider transition matrices cautiously. Furthermore, γ^{good} tends to become more concentrated in the high-value ranges, consistent with the previous hypothesis.

As a complementary analysis, panels (a), (b), and (c) of Figure A4 in the Appendix compare the analogous transition between goods while Table A9 displays the synthetic index and the conditional distribution tests. On the one hand, this analysis makes it possible to evaluate the persistence of individuals' positionality among alternative goods. On the other hand, it helps to explore whether one is more positional than another. Again, we confirm the heterogeneity in the ranges of γ at the individual levels between goods. However, a greater accumulation of frequencies is observed on the main diagonal, primarily in the cases of jewelry vs. health insurance and car vs. health insurance. The results based on K-S tests suggest a strong association in the degree of positionality between goods. That is, when an individual has a high positionality in health insurance (or car), he or she tends to have a higher γ^{car} and γ^{jewerly} (or γ^{jewerly}).

Figure 2: Matrix transition of subjects a marginal degree of positionality. Baseline Criterion



(a) Income vs. Health Insurance **(b)** Income vs. Jewelry **(c)** Income vs. Car

This figure displays subjects' movements (and their γ^b) when they choose alternative treatments. We created these transition matrices to represent the transition probability between an income concern parameter and marginal positionality parameter for health insurance, cars, and jewelry (panels a, b, and c, respectively). Each row in the matrix represents the γ^{income} under the relative income experiment, while each column represents the γ^{good} under the relative, conditional to the individual's γ^{income}. The diagonal of the matrix represents the persistence of subjects in each of the six ranges of γ for the income and goods considered.

Table 5: Synthetic index and conditional distribution tests. Conditional variable: income. Entire sample

	Baseline Criterion			Extended Criterion		
Goods:	Jewerly	Insurance	Car	Jewerly	Insurance	Car
Transition matrix						
% persistence ($\gamma^{\text{goods}} = \gamma^{\text{income}}$)	0.31	0.31	0.37	0.34	0.36	0.37
% $\gamma^{\text{goods}} \geq \gamma^{\text{income}}$	0.73	0.77	0.80	0.78	0.83	0.82
Conditional distribution test: p - value						
H_0: $\gamma_i^{\text{goods}} < \gamma_j^{\text{goods}}$ if $\gamma_i^{\text{income}} \leq 0.5$ and $\gamma_j^{\text{income}} > 0.5$	0.23	0.28	0.00	0.29	0.03	0.02
H_0: $\gamma_i^{\text{goods}} > \gamma_j^{\text{goods}}$ if $\gamma_i^{\text{income}} \leq 0.5$ and $\gamma_j^{\text{income}} > 0.5$	1.00	1.00	1.00	1.00	1.00	1.00
H_0: $F_i(\gamma^{\text{goods}} \mid \gamma^{\text{income}} \leq 0.5) = F_j(\gamma^{\text{goods}} \mid \gamma^{\text{income}} > 0.5)$	0.41	0.51	0.01	0.53	0.05	0.04
N	297	353	194	567	639	358

This Table displays the synthetic measures from the transition matrix and the test of differences on the conditional distributions $F_i(\gamma^{\text{goods}} \mid \gamma_u^{\text{income}} \leq 0.5)$ and $F_j(\gamma^{\text{goods}} \mid \gamma_d^{\text{income}}) > 0.5$. We report the frequency of persistence between γ^{goods} and γ^{income} (the sum of the unconditioned frequencies of the matrix's main diagonal). p-values Kolmogorov-Smirnov tests for the three alternative hypotheses. The p-value of the equal distribution test is estimated using the exact option.

5.3 Some drivers of positional concern

In this subsection, first, we explore the presence of differences in the positionality parameter by gender. Second, we assess the role of luck and inheritance in determining the positional level of participants. These subsections allow us to test hypotheses H3-a and H3-b/H3-c, respectively.

5.3.1 Does the gender of respondents and their grandchild matter?

Gender is a source of heterogeneity in risk attitudes, attitudes towards competition, and social preferences (Bertrand, 2011). Walker and Frank (1999) states that men should be more positional concerned based on the evolutionary argument. We replicate the analysis in Figure 1, and compare the γ^b distribution and their means for men and females. We conducted mean and Epps-Singleton tests to compare the results and found no statistical differences between gender. We also confirm the same U-shape pattern for the marginal degree of positionality (see Figure A5 in the Appendix).

The previous analysis focused on the differences between the γ^b distribution by gender. Now, we shift our focus to the average marginal degree of positionality. Referring back to the estimate in Table 4, we

present the complete estimate for the Random Effects and Interval Regression model in Table A5 of the Appendix. One of the covariates used in the model is gender, which is statistically significant and positive when considering the Extended Criterion.[11] Our analyses suggest no significant difference by gender, even if there is weak evidence that females have higher positionality than men. These results contradict the evolutionary arguments on which our hypothesis (H3-a) is based on that positionality and with the results obtained by Johansson-Stenman et al. (2002). However, Alpizar et al. (2005) also confirmed a greater relative concern for females than for men and suggested that the differences would be driven by fairness concerns because females have more socially oriented behavior.

As an additional exercise, we exploit grandchildren's gender information treatment. Respondents may have gender preferences for their grandchildren and different levels of altruism for the next generation. In our relative income and relative consumption experiment, we introduce two original information treatments that alternatively considers the well-being of their imagined granddaughter or imagined grandson. Because the sex of the grandchild was randomly distributed, we estimate the treatment effect on the mean of the γ distribution. We replicate the analysis presented in Figure A5 but by grandchild gender. Figure A6 in the Appendix shows these results and suggests no significant differences in the parameter between responses based on granddaughters and grandsons. We also compare results based on these treatment groups with the control group (text said grandson/granddaughter), and we do not find statistically significant differences.

5.3.2 Positional concern and the role of the origin of inequality

In this section, we focus on fairness treatment to assess the contribution of self-centered income inequality to our measure of positional concern. This treatment was only applied to Sample B and the relative income experiment. Table 6 reports the results of our parametric estimates for the Baseline and Extended Criterion. Columns (1) to (2) report the result of the Random Effect model, columns (3) and (4) the Fixed Effect model, while (6) and (7) report the estimates based on interval regressions. Columns (1), (2), (6), and (7) include the same set of control variables as Table 4. As Table 4, we report the results for all cases and with consistency criterion, but in this case, only between income's hypothetical scenario and scenario with fairness informational treatment (Income-treatments consistency).

The differences observed when comparing the marginal positionality parameter for income of the *inheritance* and control groups are negative in all cases, but their significance is weak. Only in the cases of Random Effect and Interval Regression models carried on the Balanced Criterion are the treatment effects of the *inheritance* message statistically significant at the 10% significance level. However, the non-significance of treatment seems to be associated with the sample size and a test power problem. The test power problem is alleviated when we use the Extended Criterion. In this case, the treatment effects of the *inheritance-message* are statistically significant at the 5% significance level for all regressions. The sign of the effect is consistently negative across the different specifications used, showing a lower degree of income positionality when participants receive a message framing that *inheritance* is the source of

[11] The difference by gender is only confirmed for the average positionality. In order to assess whether the differences by gender are confirmed for any of the goods, we run additional estimates, including interaction terms between variables identifying the goods and females. In any case, we find significant differences. Therefore, we cannot attribute the higher positionality of females to the consumption of any specific goods. These results are not reported but are available from the authors.

inequality.

The effect of the *effort-message* is not statistically significant, although the sign of the effect is consistently negative across the different specifications and consistency criteria. When we consider these two information treatments together, their effect is negative and generally significant (see Table A10 in the Appendix).

These results, on the one hand, provide weak evidence regarding our hypothesis H3-b: $\gamma^{\text{income}-\text{effort}} \leq \gamma^{\text{income}}$. On the other hand, they support that $\gamma^{\text{income}-\text{inheritance}} < \gamma^{\text{income}}$. This result suggests that grandchildren's inheritance is perceived as merit -the effort of the previous generation (parents/mothers and grandparents/grandmothers) and not as an unfair circumstance. Considering the hypothetical grandparents' response, the inheritance could be interpreted as the respondents' effort. This interpretation is in agreement with the idea that individuals are less likely to accept inequality when it comes from differential effort/inheritance, while they are more reluctant when it comes from circumstances that are beyond individual control as luck.

These results support the idea that the income positionality parameter is influenced by self-centered inequality aversion. One way to discount this effect is to calculate the difference between the positionality parameters of goods and income. As suggested by hypothesis H1-b, if a good is positional, the result of this difference should be positive. Note that this difference's magnitude establishes a lower positionality threshold motivated exclusively by consumption.

Table 6: Effort and Inheritance. Different Specifications and consistency criteria. Sample B

	Random Effect		Fixed Effect		Int. Reg.	
I. Baseline Criterion						
Omitted variable: Only income -control group-						
Effort	-0.051	-0.042	-0.048	-0.048	-0.089	-0.078
	(0.040)	(0.044)	(0.045)	(0.045)	(0.074)	(0.083)
Inheritance	-0.077*	-0.064	-0.058	-0.058	-0.133*	-0.124
	(0.039)	(0.043)	(0.044)	(0.045)	(0.070)	(0.079)
Constant	-0.052	0.023	0.622***	0.593***	-0.704	-0.443
	(0.485)	(0.595)	(0.010)	(0.016)	(1.014)	(1.397)
Observations	841	404	841	404	841	404
R2	0.014	0.014	0.014	0.014	-.-	-.-
II. Extended Criterion						
Omitted variable: Only income -control group-						
Effort	-0.045	-0.046	-0.050	-0.050	-0.085	-0.085
	(0.040)	(0.042)	(0.044)	(0.044)	(0.087)	(0.088)
Inheritance	-0.098**	-0.093**	-0.089**	-0.089**	-0.195**	-0.183**
	(0.039)	(0.042)	(0.044)	(0.044)	(0.083)	(0.085)
Constant	-0.030	-0.099	0.652***	0.651***	-0.871	-0.761
	(0.467)	(0.549)	(0.009)	(0.016)	(1.185)	(1.379)
Observations	1,010	502	1,010	502	1,010	502
R2	0.022	0.022	0.022	0.022	-.-	-.-
Controls	Yes	Yes	No	No	Yes	Yes
Income-treatments consistency	No	Yes	No	Yes	No	Yes

The covariates included as controls are: age; age squared; sex (1=female); household size; if the young person left the home of origin (1=Yes); years of education (1=<10 years of education); and labor condition based on two dummy variables (work between 30 and 40 hours a week, and work more than 40 hours a week). Additionally, we include a dummy variable that identifies whether the young person belongs to sample A or B. *Significant at 10%, **significant at 5%, ***significant at 1%. Standard errors are in parentheses.

6 Robustness checks and additional analysis

6.1 With what variables is the marginal positionality parameter associated?

Aiming to assess the validity of γ as a measure of the marginal degree of positionality, we analyze whether our estimates of this parameter correlate with variables related to the preferences for status. On the one hand, we identify whether respondents compare themselves with others by looking up or down based on the questions included in Leites et al. (2022). This question is available for the entire sample. We also use the questions proposed in Heffetz (2011) to identify the visibility of the goods. From the list of 31 goods, we selected the 10 with the highest visibility for the Uruguayan case (Leites et al., 2019) and calculated the percentage that each young person identifies with these goods. This question is only available for Sample A. Finally, we use a question available only for Sample B and refer to the goods that young people identify as being used by successful people and those that allow them to improve their social position. Three of the fifteen goods refer to jewelry (rings, necklaces, watches). We identify those that point to at least one of these goods. In Table A11 of the Appendix, we show descriptive statistics of preferences for status variables.

A multivariate linear regression model was used to analyze the relationship between the parameter of marginal positionality (γ) and the commented variables (see Table 7). The dependent variable is γ^{good} for each individual. We include a set of respondent characteristics and socioeconomic backgrounds as control variables: sex, age, hours worked, household size, educational achievement, and parental educational achievement. Given that we have information in a single sample (A or B) for most of the variables that approximate preferences for status, and the consequent low number of observations, we do not restrict the estimates to having simultaneously consistent responses in all goods and use the Extended Criterion to consider that the answers in each good are consistent.

The first panel includes the variables that reflect the direction of interpersonal comparisons (Veblen, 1994; Hirschman and Rothschild, 1973), distinguishing between upward-looking and downward-looking behavior. The specifications show that upward-looking individuals have a higher-than-average positionality while those downward-looking individuals have a lower-than-average positionality in the cases of jewelry and income.

The following two panels focus on a different dimension to explain positional concern: goods visibility and success signaling. The second panel presents the association between γ and the visibility index. A significant negative correlation exists between the visibility index and the income position parameter. This could be explained by the fact that individuals with high-income positionality (low visibility) tend to assign less weight to the visibility of goods consumed by others. On the other hand, in the third panel, we observe that those who think that jewelry identifies successful people or is a sign of improvements in social position have a lower parameter of positionality in health insurance. This result suggests that the magnitude of the positionality parameter is sensitive to the fairness view of the respondents. A plausible interpretation is that our positional concern measure includes some inequality aversion.

Table 7: γ estimation and preference for status. Different Specifications. Extended Criterion. Estimates not consistent in all goods/income

	(1) Jewelry	(2) Car	(3) Insurance	(4) Income
I. Comparison with other people. Entire Sample				
Looking up	0.118***	0.038	0.046	0.112***
	(0.045)	(0.054)	(0.041)	(0.038)
Looking down	-0.083*	-0.010	-0.053	-0.137***
	(0.045)	(0.058)	(0.043)	(0.038)
Obs.	623	382	699	732
R2	0.038	0.017	0.033	0.027
II. Visibility of good. Only Sample A				
Visibility Index (ln)	0.318	-0.025	-0.021	-0.355**
	(0.212)	(0.196)	(0.187)	(0.175)
Obs.	365	382	392	414
R2	0.039	0.010	0.009	0.021
III. Consumption of jewelry (watch, chain, ring). Only Sample B				
Successful people	-0.721*		-0.820***	-0.426
	(0.436)		(0.296)	(0.446)
Improves social position	-0.184		-0.627***	-0.098
	(0.301)		(0.241)	(0.250)
Obs.	258		307	318
R2	0.029		0.096	0.033

The covariates included as controls are: age; age squared; sex (1=female); household size; if the young person left the home of origin (1=Yes); years of education (1=<10 years of education); and labor condition based on two dummy variables (work between 30 and 40 hours a week, and work more than 40 hours a week). Additionally, we include a dummy variable that identifies whether the young person belongs to sample A or B. *Significant at 10%, **significant at 5%, ***significant at 1%. Standard errors are in parentheses.

Table A12 in the Appendix shows the full estimation of the entire sample. The first comment is that, with three exceptions, the demographic and socioeconomic background variables do not show a significant incidence. Young people who work between 30 and 40 hours have a higher positionality parameter for health insurance. On the other hand, women have a higher (albeit weaker) positionality parameter for jewelry. Associated with this parameter, it is also found that youth who live in households whose size is larger (generally the poorest) have a lower value.

6.2 Robustness checks

Desired number of children One concern is that respondents might provide responses motivated by 'moral satisfaction' (Kahneman and Knetsch, 1992), the desire to make a good impression on the experimenter (Gaertner and Schokkaert, 2012), signaling motives (Beshears et al., 2008), or 'self-image concerns' (Akerlof and Kranton, 2000). To mitigate these problems, our survey experiment follows the model of a previous paper and frames the experiment as a choice in which society participants prefer their hypothetical grandchild to live in 80 years, between hypothetical societies characterized by levels of average income and grandchild's income. This seeks to create distance between the choice and the current context. However, differences in the desired number of children across respondents may affect our measure of the marginal degree of positionality. A person who does not want children might respond differently than someone who strongly wants a large family. We have information about the desired number of children in our survey. That question is available in the fourth wave of ELBU. Roughly 67% of

the participants in the experimental survey prefer not to have children (50% when we consider the entire sample of respondents).

Table A13 in the Appendix presents the rate of consistency for the alternative goods and criterion according to the desired number of children. We distinguish between those who declare they want children (cols. 2 and 4) and those who do not (cols. 1 and 3). There are no relevant differences in the consistency ratios of the responses. Table A14 in the Appendix presents the average marginal degree of positionality estimates by the desired number of children for the alternative groups and criteria. The results are consistent with the baseline results.

Risk preference We also reject the hypothesis that individuals' risk preferences drive the average marginal degree of positionality for income, jewelry, and cars. We identified individuals as risk-averse, risk-neutral, or risk-loving and found no significant differences among them in tests of means for the positionality parameter. However, in the case of health insurance, we observed differences: those who exhibit risk aversion have a significantly lower positionality parameter compared to those who are risk-neutral (see Table A15 of Appendix). This result is expected because risk-averse individuals prefer a society with less relative inequality in access to goods and are willing to pay more to reduce uncertainty in accessing good medical coverage.

A measure based on a random sample of one-shot choice The results presented are based on rigorous criteria regarding the consistency of the entire sequence of responses by the participants (Baseline Criterion) or because it requires consistency in all experiments (Group I). [12] As discussed in the previous section, all these criteria yield robust results but utilize a sub-sample in order to exclude inconsistent sequences of choices. To assess the robustness of our results and potential biases associated with inconsistent sequences, we use an alternative strategy based on each choice between pairs of hypothetical situations. This strategy assumes that errors are random and caused by participant distractions. Since unintentional errors cannot be identified, each choice is assumed to reflect the true preference over the available pair of alternatives. We treat each choice as independent within each sequence of choices, allowing us to consider choices within an inconsistent sequence. We assume that correct responses outweigh distracting errors, and therefore, if we draw individual choices from the set of all available choices instead of the entire sequence of choices, we can simulate an empirical frequency of preferences at the aggregate level. The strategy requires an additional assumption about how responses to a choice are distributed within a sequence of five choices. We consider two alternatives: In Simulation 1, the distribution is based on the empirical frequency of preferences arising from the choice draw. In Simulation 2, the alternatives are distributed equally at 50%. The procedure details are described in Appendix B.

Note that this strategy does not allow for eliciting the parameter at the individual level and only provides an aggregate approximation of the distribution. The main results are described in the Appendix in Figures A7. These figures simultaneously present the results from Simulation 1 and 2 and include the results based on the Baseline Criterion for the set of experiments as a benchmark. Panels (a), (b), and (c) compare the distribution of γ^{income} with the distribution of $\gamma^{\text{insurance}}$, γ^{jewelry} and γ^{car} respectively. The

[12] Additionally, the Extended Criterion requires correction for mistakes made by the participants. We incorporate some assumptions about the mistakes to recover the sequence.

distributions of $\gamma^{\text{insurance}}$, γ^{jewelry} and γ^{car} are bimodal, and the frequencies are concentrated at the lowest $(-\infty, 0)$ and highest $(1, +\infty)$ range of γ. However, γ^{income} presents more uniform distribution. For all goods and income, most people are positional. Finally, the results reported in the three panels are very strong: changing the relative situation of the individual from the income to the goods noticeably shifts the distribution of the parameter of positionality towards the right. Furthermore, the mean based on these simulations confirms that these goods are more positional than income. The average γ based on simulation 1 is 63 for Health insurance, 62 for Jewelry, 62 for Cars, and 49 for income. Although we could not make inferences from this strategy, the results are absolutely consistent with our main results regarding HI-a.

Lexicographic strategy A methodological concern is that respondents might provide a lexicographic strategy as a cognitively easy attempt to complete the survey. This could explain the large frequency of "extreme" values of γ. We follow (Alpizar et al., 2005) and analyze the impact of removing lexicographic responses on the mean marginal degree of positionality. The results remain qualitatively the same when we exclude the two extreme ranges of the distribution (Table A16 in the Appendix). We redid our main estimates by excluding both outliers (see Table A17 of Appendix). With the Baseline Criterion (Panel I), the estimates became more imprecise due to the low number of cases. However, when we considered the Extended Criterion (Panel II), the main results were maintained with only two slight changes. Firstly, the positionality of goods increased concerning income when we considered estimates with fixed and random effects. The most significant increase was observed in the case of health insurance. Secondly, the coefficients associated with the interval regression decreased by 30-40% compared to the base estimate. Both of these results indicate that the gaps between both estimates have significantly reduced.

Order effect The order in which the hypothetical scenarios are presented could affect the participants' responses due to fatigue or because they are learning how the experiment works. Unfortunately, it was impossible to randomize the order of the hypothetical scenarios for different goods and income during the fieldwork. In the entire sample, questions were first asked about the hypothetical scenario associated with jewelry, followed by the hypothetical scenario of health insurance. Lastly, the hypothetical income scenario was included. However, in Sample A, the hypothetical car scenario was included in the third position, which was not included in Sample B. Therefore, in Sample A, the income scenario was in the fourth position, while in Sample B, it was in the third. Table A18 in the Appendix tests the mean difference of the income positionality parameter in both samples and finds no significant differences, except in Group I of the Extended Criterion where there is a significant difference at 10%. Although this exercise is inconclusive, it indicates no effect of the order in which the scenarios were presented on the average marginal degree of income positionality.

Quantile regressions We also estimate the γ for each good using quantile regressions at the median.[13] Our estimates based on quantile regressions are not affected by the specific values of γ at the distribution extremes, and the coefficients are very similar to interval regression. Table A19 of the Appendix presents the Baseline and Extended Criterion results. Our main results are robust across samples, and conclusions

[13] With this specification, we estimate the treatment effect on the median of the γ distribution instead of the effect on the mean as interval and Random/Fixed Effect estimation.

remain the same.

7 Final comments

This paper makes four main contributions to the literature on the field. First, it provides evidence for a developing country on the degree of the positionality of a list of goods with very different characteristics: health insurance (low visibility and high use value), jewelry (high visibility and low use value), and cars (high visibility and high use value). In addition, the degree of the positionality of income (low visibility and determinant of consumption capacity) is used as a benchmark. All goods present higher and more significant positionality than income. The latter presents a parameter of positionality significantly greater than zero. This result, on the one hand, confirms the findings of previous studies that associate positionality with the consumption of visible goods that signal status, economic success, and wealth.

On the other hand, a novel finding has emerged regarding the high degree of positionality observed for health insurance, suggesting that positional goods do not necessarily need to be visible. This is significant in terms of its implications for welfare and public policy. The level of positionality found for this group of goods suggests that consumption and income inequalities indirectly affect people's welfare. In the particular case of access to quality health services, it directly affects people's well-being due to its impact on health. But it would also have an indirect effect through positional concern and unequal access to this service.

Secondly, another novel result that requires further analysis is the low correlation between the positionality parameters and the variables on interpersonal comparisons and visibility of goods. In particular, we did not expect a non-significant correlation between the degree of income positionality and the relevance of income comparisons reported by individuals. These results are unexpected and raise some working hypotheses. On the one hand, the low correlation could indicate that the variables used incorporate measurement errors or measure different phenomena. This has methodological implications for understanding the origin of the difference between the measurements based on the experimental questionnaire (which assumes a specific functional form of relative concern) and those arising from direct questions. On the other hand, it could indicate that positionality is a phenomenon that encompasses multiple dimensions, and very different motivations can explain its origin depending on the goods considered, the groups taken as reference, the functional form of the relative concern, and the goods considered.

Third, the study provides evidence of the positionality parameter heterogeneity among individuals. The relatively low correlation in the positionality parameter between goods and the results yielded by the analysis of the transition matrices agrees with the founded heterogeneity.

Fourth, the study contributes evidence to understand the origin of this heterogeneity. Two alternative strategies are used. The first is based on a set of variables collected in the survey. The second is based on the use of an experimental design. In the first strategy, different determinants are explored, inquiring about the empirical relevance of demographic variables (sex, age), socioeconomic variables (educational level of the respondent, educational level of the parents, number of household members, whether the young person lives independently of their parents) and a set of measures that approximate the position-

ality of the parents (questions that reveal the relevance of interpersonal comparisons of income and the visibility of the goods). The level of positionality is positively associated with young people who no longer live with their parents, who have low levels of education, and whose parents have high levels of education. No association is found between young people's positionality parameters and parents' responses on the relevance of interpersonal comparisons and the visibility of goods. These results do not allow us to reject the intergenerational transmission of the positionality parameter, as an attenuation bias could explain it due to measurement errors. On the other hand, the magnitude of the coefficients and the weak significance of the variables used could indicate that the origin of positionality is associated with institutional factors that are not being considered in the models (Hopkins (2008)' hypothesis). On the other hand, it could also respond to unobservable individual characteristics, such as personality and skills.

The heterogeneity found in the levels of positionality and its connection to inequality aversion introduces new insights into these parameters. First, unequal access to consumption does not affect the well-being of all young people equally, leading to disparities in behavior driven by positional motivations. The findings indicate that individuals from more advantageous socioeconomic backgrounds with lower education levels may have a stronger positional concern. However, this aspect requires further exploration.

Finally, our results suggest that positional concern (driven by inequality aversion) is significantly lower when inequality is explained as a result of effort and inheritance. Participants are more tolerant of inequality resulting from "inheritance" and, to a lesser extent, from "effort," as both seem to be perceived as individual merits. It is pertinent to note that the positionality measures refer to the preferred situation for the (imaginary) grandchild of the participants, so it could be interpreted that there is a direct link between the savings resulting from the participant's effort and the inheritance received by the following generations. This could explain why inheritance is interpreted as the result of effort and therefore is perceived as merit that justifies greater tolerance for inequality. This leads respondents to have a greater tolerance for income inequality. These elements could be relevant for the design of distributive policies and taxes.

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Appendix A Appendix of Tables and Figures

Tables

Table A1: Societies in the relative-income experiment and the parameters implied Marginal degree of positionality

Society	Grandchild Income	Mean income	γ indifference
A	37,500	45,000	
C_1	37,500	30,000	0
C_2	35,625	30,000	0.125
C_3	30,625	30,000	0.5
C_4	27,500	30,000	0.75
C_5	25,000	30,000	1

The amounts of money are expressed in Uruguayan pesos (UYU). 1 USD = 32 UYU.

Table A2: Societies A and C_z in the relative consumption experiment

Societies Societies	Medical Insurance (in UYU)		Jewelry (in USD)		Income (in UYU)	
	Grandchild	Average	Grandchild	Average	Grandchild	Average
A	7,500	9,000	1,000	1,200	37,500	45,000
C_1	7,500	6,000	1,000	800	37,500	30,000
C_2	7,125	6,000	950	800	35,625	30,000
C_3	6,125	6,000	817	800	30,625	30,000
C_4	5,500	6,000	733	800	27,500	30,000
C_5	5,000	6,000	667	800	25,000	30,000

In the columns referring to medical insurance and income, the amounts of money are expressed in Uruguayan pesos (UYU). In the jewelry column, the money amounts are expressed in dollars (USD). 1 USD = 32 UYU.

Table A3: Samples sizes according to the alternatives criteria to define consistent responses

Society	γ: Break point	Set of choices (Baseline Sample)	Alternative set of choices (Extended Sample)
A	less than 0	AAAAA	AAAAA AAAAC_5 AC_2AAA AAC_3AA AAAC_4A
C_1	0 - 0.125	C_1AAAA	
C_2	0.125 - 0.5	C_1C_2AAA	
C_3	0.5 - 0.75	$C_1C_2C_3$AA	
C_4	0.75 - 1	$C_1C_2C_3C_4$A	
C_5	more than 1	$C_1C_2C_3C_4C_5$	$C_1C_2C_3C_4C_5$ A$C_2C_3C_4C_5$ AA$C_4C_4C_5$ $C_1C_2C_3$AC_5 C_1A$C_3C_4C_5$ C_1C_2AC_4C_5

Table A4: Mean of demographic and socioeconomic variables. Different samples and consistency criteria. Sample A

	Group I				p-value		
	Jewelry (1)	Insurance (2)	Income (3)	Car (4)	(1) vs. (4)	(2) vs. (4)	(3) vs. (4)
I. Baseline Criterion							
Age	20.24	20.19	20.13	20.16	0.144	0.669	0.589
Male	0.513	0.480	0.488	0.464	0.284	0.717	0.568
Emancipated	0.152	0.176	0.152	0.168	0.638	0.813	0.603
Household size	4.043	3.769	3.878	3.908	0.415	0.357	0.836
Work (1=Yes)	0.384	0.392	0.392	0.388	0.934	0.927	0.927
< 10 years of education	0.358	0.330	0.288	0.300	0.177	0.467	0.751
II. Extended Criterion							
Age	20.19	20.17	20.16	20.16	0.452	0.707	0.974
Male	0.486	0.464	0.487	0.476	0.773	0.721	0.746
Emancipated	0.153	0.146	0.160	0.150	0.908	0.875	0.675
Household size	3.944	3.922	3.934	3.906	0.758	0.980	0.811
Work (1=Yes)	0.367	0.380	0.400	0.382	0.676	0.954	0.580
< 10 years of education	0.327	0.321	0.321	0.300	0.409	0.507	0.497

Table A5: Multivariate regression estimates for γ - Full estimation

	Baseline Criterion				Extended Criterion			
	Random Effect		Int. Reg.		Random Effect		Int. Reg.	
Health Insurance	0.205***	0.221***	0.527***	0.770***	0.266***	0.282***	1.003***	1.138***
	(0.032)	(0.056)	(0.084)	(0.215)	(0.027)	(0.034)	(0.105)	(0.152)
Jewelry	0.205***	0.298***	0.542***	1.133***	0.247***	0.283***	0.947***	1.166***
	(0.035)	(0.055)	(0.091)	(0.224)	(0.029)	(0.035)	(0.109)	(0.153)
Car	0.222***		0.549***		0.252***		0.912***	
	(0.038)		(0.108)		(0.032)		(0.130)	
Age	-0.046	0.021	-0.156	0.142	-0.038*	-0.015	-0.244	-0.238
	(0.029)	(0.198)	(0.124)	(0.729)	(0.022)	(0.029)	(0.166)	(0.241)
Age2	0.001*	-0.000	0.003	-0.003	0.001**	0.000	0.005	0.005
	(0.000)	(0.004)	(0.002)	(0.016)	(0.000)	(0.000)	(0.003)	(0.005)
Female	0.034	0.004	0.099	-0.010	0.051**	0.045	0.214**	0.191
	(0.031)	(0.060)	(0.079)	(0.235)	(0.026)	(0.035)	(0.100)	(0.151)
Household size	-0.010	-0.008	-0.014	-0.012	-0.010	-0.008	-0.025	-0.013
	(0.010)	(0.018)	(0.023)	(0.072)	(0.007)	(0.010)	(0.029)	(0.044)
Emancipated	0.062	0.186**	0.184	0.835***	0.011	0.044	0.059	0.222
	(0.045)	(0.079)	(0.114)	(0.323)	(0.038)	(0.047)	(0.143)	(0.209)
< 10 years of education	-0.004	0.027	0.016	0.091	-0.009	-0.021	0.002	-0.107
	(0.035)	(0.064)	(0.088)	(0.249)	(0.030)	(0.040)	(0.111)	(0.165)
Work (omitted: < 30 hours)								
30-40 hours	0.069*	0.045	0.180*	0.143	0.062**	0.062	0.245**	0.261
	(0.036)	(0.075)	(0.096)	(0.286)	(0.031)	(0.042)	(0.119)	(0.182)
>40 hours	0.044	0.012	0.103	-0.012	0.030	0.029	0.093	0.111
	(0.036)	(0.062)	(0.093)	(0.267)	(0.030)	(0.041)	(0.118)	(0.177)
Sample	0.022	0.044	0.061	0.143	-0.000	0.032	0.011	0.093
	(0.032)	(0.061)	(0.083)	(0.236)	(0.027)	(0.035)	(0.105)	(0.153)
Constant	1.167***	0.214	2.328	-1.562	1.113***	0.730*	3.444*	3.078
	(0.404)	(2.207)	(1.519)	(8.315)	(0.318)	(0.425)	(2.017)	(2.928)
σ_u			0.556***	0.941***			0.812***	0.882***
			(0.056)	(0.156)			(0.069)	(0.109)
σ_e			1.102***	1.683***			1.548***	1.764***
			(0.047)	(0.130)			(0.058)	(0.090)
Obs.	1638	561	1638	561	2436	1350	2436	1350

*Significant at 10%, **significant at 5%, ***significant at 1%. Standard errors are in parentheses.

Table A6: Balance checks by treatment arm: grandchild vs. granddaughter groups. Sample A

	All			Consistent with Income		
	Grandson	Granddaughter	t test	Grandson	Granddaughter	t test
Age	20.14	20.16	0.316	20.11	20.17	0.925
Male	0.424	0.508	1.968	0.472	0.497	0.489
Emancipated	0.149	0.147	0.035	0.142	0.166	0.624
Household size	4.029	3.867	1.079	3.875	3.872	0.019
Work (1=Yes)	0.435	0.347	2.131	0.438	0.349	1.717
At high-school (1=Yes)	0.520	0.478	0.982	0.561	0.511	0.947
< 10 years of education	0.320	0.320	0.004	0.295	0.289	0.140
N	276	278		176	187	

Table A7: Balance checks by treatment arm: effort vs. inheritance groups. Sample B

	I. All			**II.** Income-treatments consistency		
	Effort	Inheritance	t test	Effort	Inheritance	t test
Age	20.82	20.75	0.236	20.93	20.76	0.382
Male	0.482	0.500	0.364	0.484	0.527	0.611
Emancipated	0.168	0.194	0.687	0.227	0.218	0.148
Household size	3.882	3.813	0.424	3.684	3.972	1.194
Work (1=Yes)	0.429	0.413	0.336	0.454	0.427	0.379
At high-school (1=Yes)	0.597	0.612	0.300	0.588	0.600	0.180
< 10 years of education	0.236	0.277	0.935	0.237	0.282	0.728
N	191	206		97	110	

The balance checks are made for all Sample B (panel I.) and the subset of those responses consistent in the income scenario (γ^{income}), considering the controls and those treated by inheritance and effort (Income-treatments consistency) (panel II).

Table A8: Marginal degree of positionality of health insurance ($\gamma^{insurance}$) by public health insurance assessment, the relevance of health in the live, and employment status

	I. Baseline Criterion				**II.** Extended Criterion			
	Group I		Group II		Group I		Group II	
	$\gamma^{\text{insurance}}$	N	$\gamma^{\text{insurance}}$	N	$\gamma^{\text{insurance}}$	N	$\gamma^{\text{insurance}}$	N
A. Assessment of public health insurance (Sample A†)								
(1) Very bad, bad or regular	0.81	42	0.72	16	0.91	61	0.85	33
(2) Good or very good	0.87	117	0.80	47	0.96	175	0.98	120
I do not known	0.98	21	0.80	8	1.00	42	0.89	24
Mean test - (1) vs. (2)								
p-value	0.54	-.-	0.61	-.-	0.47	-.-	0.19	-.-
B. Labour market status (Sample A and B)								
(1) Does not work	0.86	277	0.80	112	0.95	441	0.94	283
(2) Work	0.77	200	0.69	83	0.87	297	0.86	191
Mean test - (1) vs. (2)								
p-value	0.06	-.-	0.20	-.-	0.06	-.-	0.11	-.-
C. How important is health and nutrition in your life (Sample A†)								
(1) Low priority (score: 1-6)	0.79	34	0,65	12	0,89	54	0.93	28
(2) High priority (score: 7-9)	0.88	157	0.81	65	0.97	246	0.95	163
Mean test - (1) vs. (2)								
p-value	0.32	-.-	0.36	-.-	0.27	-.-	0.82	-.-

† The information about respondents' assessment of public health insurance and the priority to health in their lives was elicited in wave 4 of ELBU, 3-4 years before conducting the consumer experiment (Sample A lagging). We do not have this information for the friends of the ELBU youth (Sample B). The results are only tentative due to the number of observations (particularly concerning the priority of health in the respondents' lives).

Table A9: Synthetic index and conditional distribution tests. Conditional variable: health insurance or jewelry. Entire sample

	Baseline Criterion			Extended Criterion		
Good* Good†	Jewerly Insurance	Car Insurance	Car Jewerly	Jewerly Insurance	Car Insurance	Car Jewerly
Transition matrix						
% persistence ($\gamma^{\text{good}^{\star}} = \gamma^{\text{good}^{\dagger}}$)	0.57	0.31	0.31	0.60	0.36	0.34
% $\gamma^{\text{good}^{\star}} \geq \gamma^{\text{good}^{\dagger}}$	0.80	0.77	0.73	0.79	0.83	0.78
Conditional distribution test: p - value						
H_0: $\gamma_i^{\text{good}^{\star}} < \gamma_j^{\text{good}^{\star}}$ if $\gamma_i^{\text{good}^{\dagger}} \leq 0.5$ and $\gamma_j^{\text{good}^{\dagger}} > 0.5$	0.01	0.14	0.01	0.00	0.09	0.00
H_0: $\gamma_i^{\text{good}^{\star}} > \gamma_j^{\text{good}^{\star}}$ if $\gamma_i^{\text{good}^{\dagger}} \leq 0.5$ and $\gamma_j^{\text{good}^{\dagger}} > 0.5$	1.00	1.00	1.00	1.00	1.00	1.00
H_0: $F_i(\gamma^{\text{good}^{\star}} \mid \gamma^{\text{good}^{\dagger}} \leq 0.5) = F_i(\gamma^{\text{good}^{\star}} \mid \gamma^{\text{good}^{\dagger}} > 0.5)$	0.00	0.25	0.01	0.00	0.16	0.00
N	237	353	297	540	639	567

This Table displays the synthetic measures from the transition matrix and the test of differences on the conditional distributions $F_i(\gamma^{\text{goods}^{\star}} \mid \gamma_a^{\text{good}^{\dagger}} \leq 0.5)$ and $F_i(\gamma^{\text{good}^{\star}} \mid \gamma_b^{\text{good}^{\dagger}}) > 0.5$. We report the frequency of persistence between $\gamma^{\text{good}^{\star}}$ and $\gamma^{\text{good}^{\dagger}}$ (the sum of the unconditioned frequencies of the matrix's main diagonal). p-values Kolmogorov-Smirnov tests for the three alternative hypotheses. The p-value of the equal distribution test is estimated using the exact option.

Table A10: Effort/Inheritance. Different Specifications and consistency criteria. Sample B

	Random Effect		Fixed Effect		Int. Reg.	
I. Baseline Criterion						
Omitted variable: Only income -control group-						
Effort/Inheritance	-0.065**	-0.054*	-0.054*	-0.054*	-0.113**	-0.102*
	(0.030)	(0.032)	(0.032)	(0.032)	(0.054)	(0.060)
Constant	0.058	0.014	0.622***	0.593***	-0.709	-0.459
	(0.484)	(0.594)	(0.010)	(0.016)	(1.014)	(1.397)
Observations	841	404	841	404	841	404
R2	0.014	0.014	0.014	0.014	-.-	-.-
II. Extended Criterion						
Omitted variable: Only income -control group-						
Effort/Inheritance	-0.074**	-0.071**	-0.071**	-0.071**	-0.143**	-0.137**
	(0.030)	(0.032)	(0.031)	(0.031)	(0.063)	(0.065)
Constant	-0.041	-0.114	0.652***	0.651***	-0.888	-0.784
	(0.465)	(0.549)	(0.009)	(0.016)	(1.185)	(1.379)
Observations	1,010	502	1,010	502	1,010	502
R2	0.020	0.020	0.020	0.020	-.-	-.-
Controls	Yes	Yes	No	No	Yes	Yes
Income-treatments consistency	No	Yes	No	Yes	No	Yes

In this case, the estimates are made for all Sample B and the subset of those responses consistent in the income scenario (γ^{income}), considering the controls and those treated by inheritance and effort (Income-treatments consistency). The covariates included as controls are: age; age squared; sex (1=female); household size; if the young person left the home of origin (1=Yes); years of education (1=<10 years of education); and labor condition based on two dummy variables (work between 30 and 40 hours a week, and work more than 40 hours a week). *Significant at 10%, **significant at 5%, ***significant at 1%. Standard errors are in parentheses.

Table A11: Preference for status. Extended Criterion

	Sample A				Sample B			
	Mean	Std. Dev.	Min.	Max.	Mean	Std. Dev.	Min.	Max.
I. Comparison with other people. Entire Sample								
Looking up	5.94	3.52	1.00	10.00	8.20	2.08	1.00	10.00
Looking down	5.87	3.51	1.00	10.00	8.15	2.02	1.00	10.00
II. Visibility of good. Only Sample A								
Visibility Index (ln)	-0.35	0.63	-3.00	0.00				
III. Consumption of jewelry (watch, chain, ring). Only Sample B								
Successful people					0.93	0.26	0.00	1.00
Improves social position					0.66	0.47	0.00	1.00

In the Looking up, the question is: "Imagine that you get an offer of a permanent full-time job that you like. Your potential employer asks you to indicate the wage you are willing to receive. For each of the following items, please indicate on a scale from 1 to 10 (where 1 is very little and 10 is a lot) how true it is that you would consider, in your proposal, the wage of [reference group]", where the possible reference groups are: friends, family, neighbors, people with the same job profile, and union workers. Respondents are asked in the Looking down: "Imagine an economic crisis, and your household income is reduced. Indicate on a scale from 1 to 10 (where 1 is very little and 10 is a lot) how true it is that your economic satisfaction would be affected if your income falls below the income of [reference group]", where possible reference groups are the same as in the question Looking up. We compute the maximum value of each respondent's answers across all external reference groups separately for the Looking up and Looking down scenarios. The Visible Index is based on the following question: "Imagine that you meet a new person who lives in a household similar to yours. Imagine that their household is not different from other similar households except that they like to, and do, consistently spend more than average on (category of good). How closely would you have to interact with them to observe the consistently above-average spending (on each category of goods)? Would you notice it almost immediately upon meeting them for the first time, a short while after, a while after, only a long while after, or never?" This question was repeated for 31 categories of goods. As Heffetz (2011), we first recorded the responses as follows: zero (answer=3: no visibility), 0.5 (answer =2: medium visibility), and 1 (answer =1: maximum visibility). Then for each individual, we calculated the average value of the 10 (out of 31 possible) items in Leites et al. (2019) to show the highest level of visibility for young people in Uruguay. Finally, the Successful People variable is built from the question, "Imagine a person who is successful in what they do. Do they have any of the following goods?" The variable Improves Social Position arises from the question, "Do you think that if a person increases their consumption/use of one of the following goods, their social position improves according to the opinion of the rest of society?" In both cases, fifteen different goods are listed. A dummy variable is constructed if the interviewee answers that if in the ring, watch, or chain options, the rest include goods such as sunglasses, leather jackets, or signature tattoos.

Table A12: Multivariate regression estimates for γ - EC. Full estimation

	Jewelry			Car		Insurance			Income		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Age	-0.100	-5.055	-0.217	-3.616	-4.659	-0.208	2.204	-0.313**	0.039	-3.576	-0.126
	(0.154)	(5.202)	(0.179)	(4.945)	(4.995)	(0.150)	(6.906)	(0.151)	(0.147)	(5.495)	(0.163)
Age × Age	0.002	0.126	0.004	0.086	0.111	0.003	-0.055	0.005**	-0.000	0.091	0.003
	(0.002)	(0.127)	(0.003)	(0.122)	(0.123)	(0.002)	(0.169)	(0.002)	(0.002)	(0.135)	(0.002)
Female	0.318*	0.577**	-0.043	0.204	0.224	0.112	0.206	0.045	0.223	0.124	0.417*
	(0.175)	(0.227)	(0.284)	(0.223)	(0.222)	(0.159)	(0.211)	(0.245)	(0.160)	(0.213)	(0.251)
Household size	-0.105**	-0.091	-0.138*	-0.033	-0.023	0.010	0.035	-0.028	-0.043	-0.056	0.002
	(0.052)	(0.066)	(0.082)	(0.074)	(0.075)	(0.040)	(0.049)	(0.067)	(0.044)	(0.056)	(0.072)
Emancipated	0.140	0.011	0.192	0.021	0.018	0.121	0.021	0.198	0.022	-0.072	0.166
	(0.238)	(0.310)	(0.380)	(0.334)	(0.332)	(0.221)	(0.299)	(0.353)	(0.238)	(0.325)	(0.348)
< 10 years of education	0.213	0.268	-0.046	0.257	0.243	-0.220	0.008	-0.758**	-0.038	0.136	-0.489*
	(0.188)	(0.243)	(0.328)	(0.254)	(0.258)	(0.185)	(0.238)	(0.305)	(0.186)	(0.249)	(0.290)
Work (omitted: < 30 hours)											
30-40 hours)	0.025	0.060	0.063	0.168	0.173	0.559***	0.301	0.865***	0.123	0.333	-0.121
	(0.208)	(0.274)	(0.327)	(0.258)	(0.258)	(0.179)	(0.249)	(0.256)	(0.188)	(0.257)	(0.286)
>40 hours	0.088	0.168	-0.070	0.074	0.102	0.094	0.003	0.252	0.102	-0.122	0.559*
	(0.208)	(0.271)	(0.344)	(0.266)	(0.267)	(0.199)	(0.251)	(0.325)	(0.192)	(0.252)	(0.296)
Sample	0.368*					0.234			-0.235		
	(0.206)					(0.191)			(0.184)		
Comparison with other people											
Looking up	0.118***			0.038		0.046			0.112***		
	(0.045)			(0.054)		(0.041)			(0.038)		
Looking down	-0.083*			-0.010		-0.053			-0.137***		
	(0.045)			(0.058)		(0.043)			(0.038)		
Visibility Index (ln)		0.318			-0.025		-0.021			-0.355**	
		(0.212)			(0.196)		(0.187)			(0.175)	
Consumption of jewelry (watch, chain, ring)											
Successful people			-0.721*					-0.820***			-0.426
			(0.436)					(0.296)			(0.446)
Improves social position			-0.184					-0.627***			-0.098
			(0.301)					(0.241)			(0.250)
Constant	5.537**	55.635	8.530***	41.986	53.048	7.412***	-17.841	10.159***	3.283	38.406	5.462**
	(2.158)	(53.139)	(2.565)	(50.216)	(50.656)	(2.161)	(70.692)	(2.230)	(2.090)	(55.818)	(2.388)
Obs.	623	365	258	382	382	699	392	307	732	414	318
R2	0.038	0.039	0.029	0.017	0.010	0.033	0.009	0.096	0.027	0.021	0.033

*Significant at 10%, **significant at 5%, ***significant at 1%. Standard errors in parentheses.

Table A13: Analysis of the consistency of responses by the desired number of children of respondents

	I.Baseline Criterion		II. Extended Criterion	
	Wanted number of children			
	0	>0	0	>0
Group II - % consistent	18.6	22.0	48.1	51.2
Group I - % consistent with ...				
Health insurance	50.8	52.8	75.0	84.3
Jewelry	39.6	43.2	71.9	69.6
Car	45.6	55.2	76.2	82.4
Income	65.9	69.6	82.6	84.1
N	260	127	260	127

Consistent rate based on people who participate in ELBU (sample A). The information about the wanted number of children is from wave 4 of the ELBU.

Table A14: Average marginal degree of positionality by desired number of children

	I. Baseline Criterion				**II.** Extended Criterion			
	Group I		Group II		Group I		Group II	
	γ	N	γ	N	γ	N	γ	N
I. The respondent declares that he/she does not wish to have children								
Health Insurance	0.82	132	0.79	49	0.93	195	0.94	127
Jewelry	0.86	103	0.89	49	0.93	187	0.93	127
Income	0.63	174	0.59	49	0.65	218	0.62	127
II. The respondent declares that he/she does not wish to have children								
Health Insurance	0.95	60	0.79	28	1.00	107	0.95	65
Jewelry	0.80	54	0.90	28	0.93	87	0.94	65
Income	0.60	86	0.45	28	0.57	106	0.61	65
Test of difference by the number of desired children of the respondents - p-value								
Health insurance	0.11	-.-	0.99	-.-	0.22	-.-	0.95	-.-
Jewerly	0.51	-.-	0.94	-.-	0.92	-.-	0.90	-.-
Income	0.71	-.-	0.29	-.-	0.22	-.-	0.91	-.-

Table A15: Average marginal degree of positionality by risk

	Baseline Criterion				Extended Criterion			
	Group I		Group II		Group I		Group II	
	γ	N	γ	N	γ	N	γ	N
I. Risk averse								
Jewelry	4.35	46	3.92	26	4.66	68	4.57	51
Insurance	3.82	60	3.85	26	4.22	79	4.22	51
Income	3.46	65	3.23	26	3.72	79	3.49	51
II. Risk lovers								
Jewelry	4.49	43	4.05	20	4.62	69	4.47	51
Insurance	4.18	51	3.65	20	4.63	90	4.37	51
Income	4.00	72	3.65	20	4.10	94	3.88	51
III. Risk neutral								
Jewelry	4.27	60	4.38	34	4.51	117	4.72	86
Insurance	4.45	85	4.35	34	4.87	134	4.94	86
Income	3.53	114	3.21	34	3.61	143	3.41	86
Test of difference by risk - p-value								
Jewerly								
Averse vs. Neutral	0.85		0.45		0.65		0.68	
Averse vs. Lover	0.76		0.85		0.91		0.82	
Lover vs. Neutral	0.61		0.61		0.74		0.51	
Insurance								
Averse vs. Neutral	0.09		0.41		0.03		0.05	
Averse vs. Lover	0.41		0.78		0.22		0.73	
Lover vs. Neutral	0.47		0.28		0.39		0.11	
Income								
Averse vs. Neutral	0.84		0.96		0.70		0.83	
Averse vs. Lover	0.11		0.52		0.24		0.36	
Lover vs. Neutral	0.11		0.48		0.08		0.23	

Table A16: Average marginal degree of positionality. Robustness analysis removing extreme values

	Removing		
	Lowest range	Highest range	Both extremes
I. Baseline Criterion			
Health Insurance	1.09	0.30	0.65
Jewelry	1.08	0.29	0.62
Car	1.08	0.38	0.72
Income	0.85	0.37	0.59
II. Extended Criterion			
Health Insurance	1.15	0.26	0.65
Jewelry	1.15	0.22	0.62
Car	1.15	0.29	0.72
Income	0.92	0.32	0.59

Table A17: γ estimation removing both extremes. Different Specifications and consistency criteria

	Random Effect		Fixed Effect		Int. Reg.	
I. Baseline Criterion						
Omitted variable: Income						
Health Insurance	0.092***	0.124*	0.069	0.139	0.089**	0.118
	(0.035)	(0.074)	(0.059)	(0.100)	(0.035)	(0.076)
Jewelry	0.044	0.003	-0.083	-0.117	0.053	0.038
	(0.042)	(0.085)	(0.073)	(0.105)	(0.039)	(0.073)
Car†	0.125***		0.076		0.123***	
	(0.045)		(0.075)		(0.044)	
Constant	1.232	-0.153	0.605***	0.553***	1.149	-0.326
	(0.822)	(2.327)	(0.023)	(0.042)	(0.854)	(1.989)
Observations	483	107	483	107	483	107
R2	0.023	0.125	0.050	0.174	-.-	-.-
II. Extended Criterion						
Omitted variable: Income						
Health Insurance	0.329***	0.403***	0.384***	0.460***	0.677***	0.782***
	(0.032)	(0.044)	(0.041)	(0.052)	(0.072)	(0.098)
Jewelry	0.277***	0.358***	0.304***	0.360***	0.587***	0.706***
	(0.036)	(0.047)	(0.044)	(0.055)	(0.072)	(0.092)
Car†	0.281***		0.311***		0.549***	
	(0.041)		(0.048)		(0.085)	
Constant	0.923***	0.483	0.604***	0.563***	2.180	2.472
	(0.318)	(0.421)	(0.024)	(0.031)	(1.616)	(2.418)
Observations	1,281	623	1,281	623	1,281	623
R2	0.152	0.225	0.153	0.228	-.-	-.-
Group	I	II	I	II	I	II
Controls	Yes	Yes	No	No	Yes	Yes

The covariates included as controls are: age; age squared; sex (1=female); household size; if the young person left the home of origin (1=Yes); years of education (1=<10 years of education); and labor condition based on two dummy variables (work between 30 and 40 hours a week, and work more than 40 hours a week). Additionally, we include a dummy variable that identifies whether the young person belongs to sample A or B. *Significant at 10%, **significant at 5%, ***significant at 1%. Standard errors are in parentheses. † The hypothetical scenario of the cars was only presented to sample A. Therefore, consistency refers to that population.

Table A18: Average marginal degree of positionality by order effect

	Baseline Criterion				Extended Criterion			
	Group I		Group II		Group I		Group II	
	γ	N	γ	N	γ	N	γ	N
Income in 4th position	3.63	260	3.25	83	3.80	329	3.57	195
Income in 3rd position	3.52	361	3.22	112	3.54	456	3.53	280
Test of differences of means - p-value								
4th vs. 3rd position	0.493		0.924		0.086		0.820	

Table A19: Quantile regressions estimates analysis for γ. Robustness analysis

	I. Baseline Criterion		**II.** Extended Criterion	
	(1)	(2)	(3)	(4)
Omitted variable: Income				
Health Insurance	0.500***	0.750***	0.750***	1.125***
	(0.036)	(0.108)	(0.079)	(0.073)
Jewelry	0.500***	0.750***	0.750***	1.125***
	(0.037)	(0.074)	(0.080)	(0.070)
Car	0.500***	-.-	0.750***	-.-
	(0.037)	-.-	(0.091)	-.-
Constant	0.750	0.500	0.500	0.125
	(1.720)	(2.000)	(1.179)	(0.770)
Observations	1,631	587	2,432	1350
Pseudo R2	0.082	0.115	0.113	0.144
Group II	No	Yes	No	Yes

The covariates included as controls are: age; age squared; sex (1=female); household size; if the young person left the home of origin (1=Yes); years of education (1=<10 years of education); and labor condition based on two dummy variables (work between 30 and 40 hours a week, and work more than 40 hours a week). Additionally, we include a dummy variable that identifies whether the young person belongs to sample A or B. *Significant at 10%, **significant at 5%, ***significant at 1%. Standard errors are in parentheses. The estimate was made for the 50th quantile.

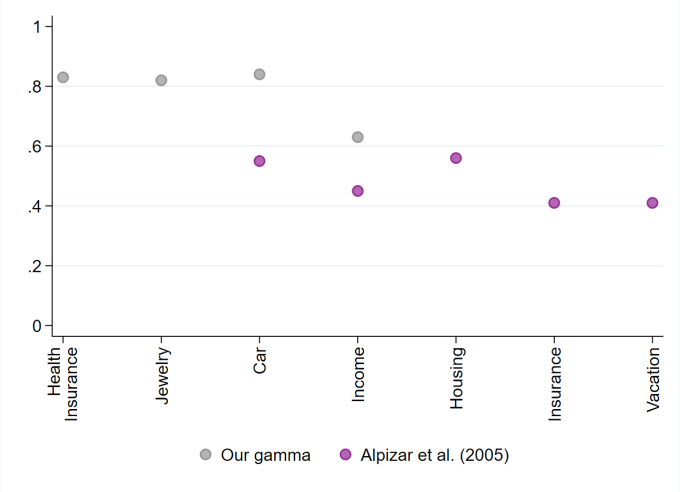
Figures

Figure A1: Screenshot of baseline instructions

B.4) ...el ingreso mensual de tu nieto/a y el ingreso mensual promedio del resto de las personas de esa sociedad. Además, sabes que el ingreso de tu nieto/a se debe, en gran medida, a una herencia que recibió. Por favor, elegí en cuál de las sociedades que te muestro a continuación, tu nieto/a estará mejor.
(MOSTRAR TARJETAS)

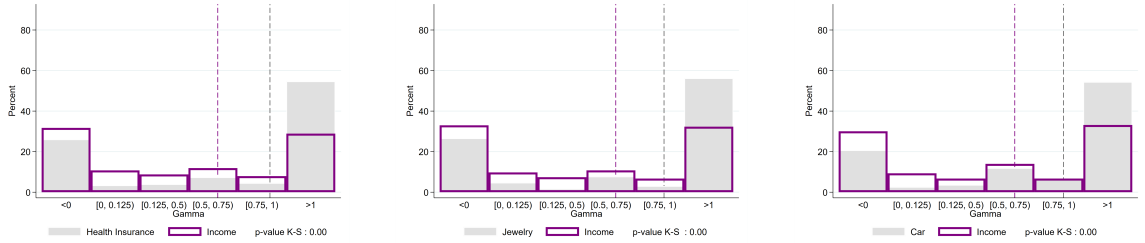
		Situación 1	Situación 2	Situación 3	Situación 4	Situación 5
Sociedad A	Ingreso mensual del nieto/a en sociedad A	$ 37500	$ 37500	$ 37500	$ 37500	$ 37500
	Ingreso medio mensual de la sociedad A	$ 45000	$ 45000	$ 45000	$ 45000	$ 45000
Sociedad B	Ingreso mensual del nieto/a en sociedad B	$ 37500	$ 35625	$ 30625	$ 27500	$ 25000
	Ingreso medio mensual de la sociedad B	$ 30000	$ 30000	$ 30000	$ 30000	$ 30000
Encuestador Para que el encuestado realice las elecciones, es necesario que lea las tarjetas correspondientes a cada situación, considerándolas por separado. Es decir, que primero seleccione sus preferencias en relación a la situación 1, luego a la 2 y así sucesivamente hasta culminar.						
Prefiero sociedad A						
Prefiero sociedad B						

Figure A2: Comparative of the marginal degree of positionality γ in Uruguay and Costa Rica



Developed by us using data from the applied questionnaire in Uruguay and data presented by Alpizar et al. (2005) for Costa Rica.

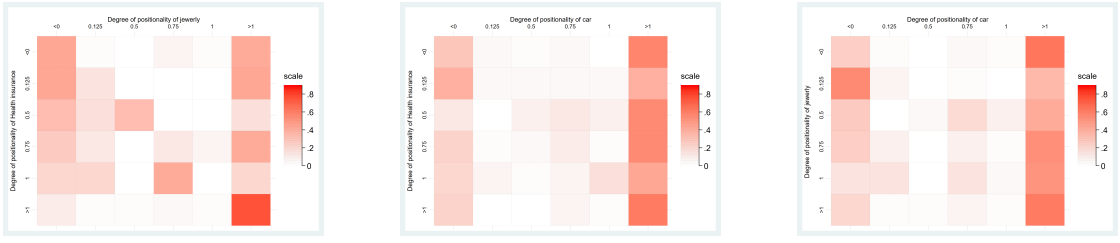
Figure A3: Marginal degree of positionality distribution - alternatives goods. Extended Criterion



(a) Health Insurance **(b)** Jewelry **(c)** Cars

This figure displays the distribution of γ estimated using the Extended Criterion in each case. In the *x-axis*, we report the implied value of γ associated with different choices of A and C_z. On the *y-axis*, we report the frequency of γ associated with each good and income. The dot-dashed line represents our estimate for the mean using OLS regression of γ over a constant. p-values Kolmogorov-Smirnov tests for equal distribution are presented in each graph.

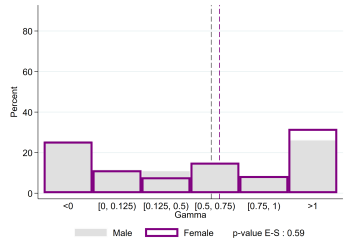
Figure A4: Matrix transition of subjects a marginal degree of positionality. Baseline Criterion



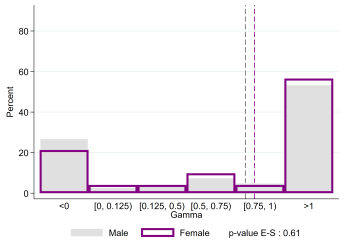
(a) Jewelry vs. Health Insurance **(b)** Car vs. Health Insurance **(c)** Car vs. Jewelry

This figure displays subjects' movements (and their γ^b) when they choose alternative treatments. We created these transition matrices to represent the transition probability between the goods. The rows represent the γ of the first-mentioned goods in the matrix, and the columns the γ of the second-mentioned goods conditional on the other γ included in the matrix. The diagonal of the matrix represents the persistence of subjects in each of the six ranges of γ for the goods considered.

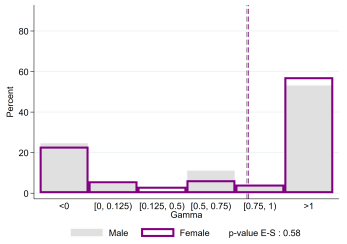
Figure A5: Marginal degree of positionality distribution by gender



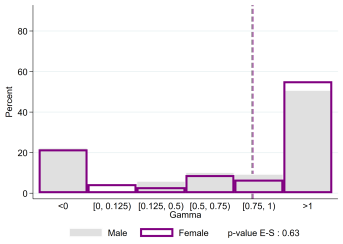
(a) Income



(b) Health Insurance



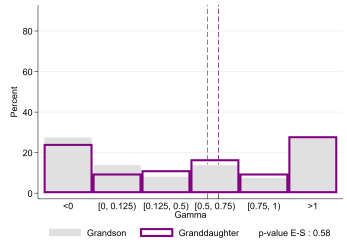
(c) Jewelry



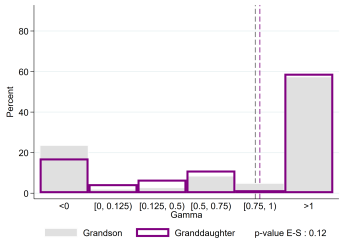
(d) Cars

This figure displays the distribution of γ estimated using the Baseline Criterion in each case. In the *x-axis*, we report the implied value of γ associated with different choices of A and C_z. On the *y-axis*, we report the frequency of γ associated with each good and income. The dot-dashed line represents our estimate for the mean for males and females using OLS regression of γ over a constant. The hypothesis that the means are different is rejected in all cases, even for income and health insurance. The p-value of the mean difference test in income is 0.304 (where the mean value for males is 0.606 and for females is 0.649) and 0.346 in health insurance (where the mean value for males is 0.801 and for females is 0.847). p-values Epps-Singleton tests for equal distribution are presented in each figure.

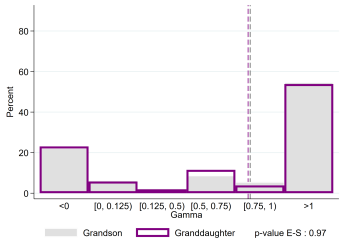
Figure A6: Marginal degree of positionality distribution by grandchild's gender



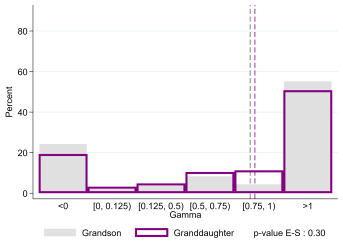
(a) Income



(b) Health Insurance



(c) Jewelry



(d) Cars

This figure displays the distribution of γ estimated using the Baseline Criterion in each case. In the *x-axis*, we report the implied value of γ associated with different choices of A and C_z. On the *y-axis*, we report the frequency of γ associated with each good and income. The dot-dashed line represents our estimate for the mean for males and females using OLS regression of γ over a constant. In all cases, the hypothesis that the means are different is rejected, even in the case of income, the p-value of the mean difference test is 0.296 (where the mean value for grandson is 0.587 and granddaughter is 0.643). p-values Epps-Singleton tests for equal distribution are presented in each graph.

Figure A7: Simulation

(a) Health Insurance **(b)** Jewelry **(c)** Cars

This figure displays the distribution of γ estimated using in each case the Baseline Criterion (as a benchmark), information based on simulation I, and information based on simulation II. Panel (a) refers to the relative consumption experiment when participants choices the consumption of Health insurance. Panel (b) refers to the relative consumption experiment when participants choices the consumption of jewelry. Panel (c) refers to the relative consumption experiment when participants choices the consumption of cars. The three panels include the results based on the relative income experiments as a benchmark. In the *x-axis*, we report the implied value of γ associated with different choices of A and C_z. On the *y-axis*, we report the frequency of γ associated with each good (bar) and income (dots).

Appendix B A random sample choice between pairs of hypothetical situations

We employed an alternative approach based on hypothetical situations presented in pairs to evaluate the robustness of our findings and potential biases arising from inconsistent responses. Specifically, we randomly selected 200 choices for each experiment involving a choice between A and C_j. In total, we obtained 1000 random choices reflecting preferences between pairs. Based on this, we reconstruct the distribution of distribution γ^{goods} and γ^{income}.

This approach provides only an aggregated measure of γ and requires certain assumptions for its implementation. Firstly, it assumes that errors are random and can be attributed to participant distraction. Since unintentional errors cannot be identified, each choice is assumed to reflect the participant's true preference between the available alternatives. Secondly, it assumes that correct choices outweigh distracting errors. For instance, if we randomly select 200 choices between A and C_4, the fourth choice in the jewelry experiment, and 80% of participants choose C while 20% choose A, the strategy assumes that a majority have a γ greater than 0.75. If all responses were due to distraction errors, the expected split would be 50% for each alternative.

Secondly, we treat each choice within a sequence as independent. This is based on the assumption that errors are based on distraction and not influenced by the order of the choice within a sequence. This assumption is crucial as it allows us to consider choices made within inconsistent sequences. Based on this assumption, we can draw individual choices from the set of all available choices rather than the entire sequence of choices and simulate the empirical frequency of preferences at the aggregate level.

The approach also relies on an additional assumption regarding the distribution of responses within a sequence of five choices. If we continue with the example, we know that 80% of participants have a γ^{jewelry} greater than 0.75, but we do not know how many of them fall within the range of $(1, +\infty]$. Similarly, 20% of responses indicate that γ^{jewelry} is below 0.75, but we require additional structure to

allocate them into the above four ranges.

We make two assumptions in the distribution of responses. First, we allocate responses based on the empirical frequency of preferences obtained from the choice draw (Simulation 1). To illustrate, in the random sample of 200 choices between A and C_4, assume that 80% choose C_4 and 20% choose A. Furthermore, from the random sample of choices between A and C_5, we know that 90% choose C_5 and 10% choose A. This distribution of choices based on actual responses suggests that the majority is willing to give up absolute jewelry consumption to increase their relative consumption. We assume this distribution to be true and distribute the 160 that prefer C_4 (80%) into 16 who prefer A over C_5 ($range(0.75, 1]$) and 144 who prefer C_5 over A ($(1, +\infty]$). We also distribute the remaining 20% choices among the four previous ranges of γ: $(-\infty, 0]$, $(0, 0.125]$, $(0.125, 0.5]$, and $(0.5, 0.75]$. Second, in an alternative (Simulation 2), we allocate responses randomly (50% and 50%). Assuming this allocation, we assign 80 participants to those who prefer A over C_5 and 80 to those who prefer C_5 over A from the 160 that prefer C_4.

The main results are presented in Figures A7, which simultaneously describe the results from both Simulation 1 and 2 and include the results based on the Baseline Criterion for the set of experiments as a benchmark. Panels (a), (b), and (c) compare the distribution of γ^{income} with the distribution of $\gamma^{\text{insurance}}$, γ^{jewelry} and γ^{car} respectively.

Figure A7 presents the distribution for both alternative simulations. Panels (a), (b), and (c) compare the distribution of γ^{income} with the distribution of $\gamma^{\text{insurance}}$, γ^{jewelry} and γ^{car} respectively. As the distribution is based on the complete sequence of responses, the distributions of $\gamma^{\text{insurance}}$, γ^{jewelry} and γ^{car} are bimodal, and the frequencies are concentrated at the lowest $(-\infty, 0)$ and highest $(1, +\infty)$ ranges of γ. However, compared with the baseline results, γ^{income} presents more uniform distribution. According to this strategy, we confirm that three goods and income are positional. Furthermore, most people are positional – their positionality parameters are positive. Finally, the results reported in the three panels are very strong: changing the relative situation of the individual from the income to the goods noticeably shifts the distribution of the parameter of positionality towards the right.

Furthermore, the mean based on these simulations confirms that these goods are more positional than income. The average γ based on simulation 1 is 63 for Health insurance, 62 for Jewelry, 62 for Cars, and 49 for income. While the average γ based on simulation 2 are 56, 56, 55, and 50, respectively.