

# RESEL

## Risk Aversion, Livelihoods and Ecosystem Services Provisioning and Deforestation in Multifunctional Landscape

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**Context** — Risk preferences are known to be an important determinant of most of the decisions regarding risk. Experimental economics has developed procedures to quantify these risk preferences. The two most common and largely used procedures are the Multiple Price List (MPL) method, popularized by Holt and Laury (2002), and the Ordered Lottery Selection (OLS) method, proposed by Binswanger (1980) and popularized by Eckel and Grossman (2008). Other methods also appear in the literature such as the certainty equivalent approach, the Becker-DeGroot-Marschak auction or the method proposed by Gneezy and Potters (1997). Some studies compare the results obtained with different methods. Dave et al. (2010), Reynaud and Couture (2012), Anderson and Mellor (2009) and find that only the individual's risk preferences classification from inheritance-based gambles are in-line with experimental measurements. Other comparisons appeared for elicitation techniques (Berg et al. (2005), Deck et al. (2008), Chuang and Schechter (2015)) but with an unanimous conclusion: elicited risk preferences are procedure dependent, and risk preferences tend to be more stable when the elicitation procedures are similar to one another (Choi et al. (2007), Chuang and Schechter (2015)). Unlike with other existing procedures, classic OLS procedure as proposed by Eckel and Grossman (2008) does not allow the precise identification of risk loving preferences. Indeed, risk neutrality and risk loving are expressed in the same last gamble choice and are then impossible to disentangle.

**Objectives** — In this context, this study aims to study the stability of individual's preferences towards risk across elicitation procedures. It answer the question: How much individuals selecting this last gamble are risk loving and at which degree? Are individual's preferences towards risk stable across elicitation procedures? If not, are there different degrees of instability? What are the driving factors of the instability?

**Approach** — To address these questions, we conducted a field experiment in which we elicited risk preferences through a classic OLS procedure composed of five gambles and an extended OLS procedure composed of nine gambles and allowed the elicitation of different degrees of risk loving compared to the classic OLS. we compare individual risk preferences elicited through both the procedures. This experiment contributes to the debate on the stability of individual preferences across elicitation procedures. The experiment is implemented on 1002 rural households in the Congo Basin. Rural households in developing countries are a common sample for elicitation of risk preferences via the OLS procedure (Binswanger (1980), Chuang and Schechter (2015)). We categorized the sample function of the (in)stability of the head of households' risk preferences between the two OLS variants.

### **Key results** —

- Four categories of households as regard to the stability of their preferences towards risk. The first category of households (11.18% of the overall sample) experienced “strong risk preferences instability”. They have reversed their risk preferences, switching from risk aversion in the classical OLS procedure to risk loving in the extended procedure. The second category experienced “stable risk preferences” across procedure, weighting 42.81% of the sample. The third category is associated to households who have a “weak instability” of preferences towards risk, weighting 34.53% of the sample. The remaining 115 individuals (that is 11,48%) are “false neutral” in the sense that they were neutral in the classical procedure but stated to be risk lovers in the extended one.
- Most of the risk neutral individuals in the classical Ordered Lottery Selection procedure are fundamentally risk lovers. The classical Ordered Lottery Selection procedure does not fit individual with neutrality in risk preferences. The extended OLS procedure allows a finer characterization of individual's preferences.

**Future perspectives** — In an ongoing article, we expect rural household's heterogeneity of risk preferences to be one of the major factors driving their preferences for multiple ecosystem goods and services and well-being in multifunctional landscape in developing countries. Indeed, risk-averse individuals would be more sceptical and less likely to deviate from status-quo no matter the pay-off relating to changes in policies/options or attributes levels compare to individual with risk-loving preferences. Further, we expect intuitive behaviour for individuals with stable risk preferences and non-intuitive behaviour for individual with “strong risk preferences instability”

**Valorization** —

#### **Presentations at conference**

Conference: International Conference on Economic and Financial Risks 20-21 June 2018At: Institute of Industrial, Insurance and Financial Risk (IRIAF), Niort, France

#### **Papers**

Brunette, M., & Ngouhouo-Poufoun, J. (2019). *Are risk preferences stable? A field experiment in Congo Basin countries* (No. 2019-18). Bureau d'Economie Théorique et Appliquée, UDS, Strasbourg. <http://www.beta-umr7522.fr/productions/publications/2019/2019-18.pdf>