Contents lists available at SciVerse ScienceDirect

# European Economic Review

# Intergenerational attitudes towards strategic uncertainty and competition: A field experiment in a Swiss bank

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## ARTICLE INFO

## ABSTRACT

With a market entry game inspired by Camerer and Lovallo (1999), we study the attitudes of junior and senior employees towards strategic uncertainty and competition. Seniors exhibit higher entry rates compared to juniors, especially when the market capacity is not too low or when earnings from entry depend on relative performance. This difference persists after controlling for attitudes towards non-strategic uncertainty and for beliefs on others' competitiveness and on relative ability. Seniors are more willing to compete when they predict a higher number of competitors. This contradicts the stereotype of less competitive older employees.

## 1. Introduction

Older workers have a lower employability notably due to a devaluation of their accumulated experience (Chan and Stevens, 2001; Boersch-Supan, 2003; OECD, 2004) and to the belief that they are less adaptable (Taylor and Walker, 1998; Nelson, 2002; MacDonald and Weisbach, 2004). The new knowledge-based organizations require decision-making skills and abilities to cope with uncertainty in more volatile environments, for which the impact of age remains unclear.

On the one hand, some studies show that older people use heuristics leading to more suboptimal choices than younger people in situations with multiple options (Finucane et al., 2002; Agarwal et al., 2009; Abaluk and Gruber, 2011; Besedes et al. 2012). There is also some evidence that older adults are more risk-averse when choosing insurances (Halek and Eisenhauer, 2001) or when investing in stocks (Hunter and Kemp, 2004; Jianakoplos and Bernasek, 2006). Mather et al. (2012) find that they weigh certainty more than young adults. On the other hand, it has been shown that seniors are no more risk averse than juniors when facing lottery choices (Charness and Villeval, 2009) and that they are less ambiguity-averse (Sproten et al., 2010). Wang and Hanna (1997) also found that seniors' portfolios contain a higher share of risky assets.

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If these studies deliver contrasted results on the preferences of juniors and seniors toward environmental risk (when the probabilities of events are known) and uncertainty (when these probabilities are unknown), the difference of attitudes toward *strategic* risk and uncertainty (regarding the actions and beliefs of others) is less explored. Yet, many important economic decisions involve strategic uncertainty, from contributing to a public good to voting or investing in entrepreneurial activities. From a cognitive perspective, it has been shown that the seniors' cognitive abilities in strategic reasoning are not deteriorated (Kovalchik et al., 2005; see also MacPherson et al., 2002; Hadi Hosseini et al., 2010; Mohr et al., 2010). Concerning the relation between strategic risk and uncertainty and competition, we are aware of only two economic studies. While Garatt et al. (2013) find that older runners have a lower propensity to compete in highly competitive elite races, Charness and Villeval (2009) find that older employees respond to competition as strongly as younger employees as soon as they opt for entering a two-person tournament instead of choosing a piece-rate payment scheme.[1]

In this study we investigate whether younger and older adults (named "juniors" and "seniors" hereafter for simplicity) differ in their attitudes toward strategic uncertainty when their chance of succeeding in a competitive environment depends either on a random draw or on their ability relative to that of the other players. We also investigate the reasons explaining these attitude differences. To this purpose we conducted an artefactual field experiment using the standard techniques of laboratory experiments with a non-standard pool of participants. This experiment was run with employees of a Swiss bank holding the same occupation (relationship managers) but belonging to different age categories.

Our design is inspired by the market entry game of Camerer and Lovallo (1999), adjusted to study the differences in strategic risk-taking between age categories and complemented by measures of confidence. The players make market entry decisions knowing the composition of their group of 10 players in terms of age categories. Given a limited market capacity, only well-ranked players can realize profits by entering the market, while entry beyond the capacity entails a loss. Depending on the "Random" or "Performance" treatment, the rank of entrants is assigned either randomly or according to the players' relative performance in a quiz. This design allows us to study the behavior of people facing strategic uncertainty, and whether entry depends on one's attitudes toward uncertainty in general, on beliefs on others' competitiveness and on relative ability. We analyze whether juniors and seniors differ in their decisions and beliefs and how they react to the manipulation of the age composition of the groups of potential competitors.

Market entry games have typically several pure asymmetric Nash equilibria, but also symmetric and asymmetric mixed equilibria, making coordination difficult. When these games are tested in the laboratory with students, players play rarely the equilibrium strategies, although a greater number of repetitions or a larger set of information allows some learning (Erev and Rapoport, 1998; Ochs, 1998; Duffy and Hopkins, 2005; see also the recent choice prediction competition for market entry games by Erev et al. (2010)). Camerer and Lovallo (1999) also found evidence of overconfidence about relative ability as players enter significantly more when ranking depends on relative ability instead of a random draw. Our results obtained with a non-standard subject pool are consistent with these previous findings.

We also find that seniors enter the market significantly *more* often than juniors when ranking depends on performance and when ranks are randomly assigned if the market capacity is not too small. Yet, both groups exhibit similar attitudes toward non-strategic uncertainty and perform similarly well in the quiz. Several dimensions explain this gap. Seniors tend to underestimate the willingness of others to compete. But the higher the number of predicted entrants *beyond* market capacity, the more they compete. We interpret this in terms of social signaling.[2] Players of each generation enter in a greater number in the Performance than in the Random treatment. However, for seniors this only occurs when the market capacity is low and the competition is potentially fiercer. Once we account for risk preferences and beliefs on relative ability and on others' competitiveness, we still find that seniors are more likely to compete than juniors. Since for some market capacities entry is always rational, this suggests that seniors had a better judgment of the situation on average, while juniors used (weakly) dominated strategies more often.

The remainder of this paper is organized as follows. Section 2 presents our experimental design, predictions and procedures. Section 3 develops our results. Section 4 discusses these results and concludes.

## 2. Experimental design and procedures

### 2.1. Design of the experiment

#### 2.1.1. The market entry game

Our market entry game is largely inspired by Camerer and Lovallo (1999).[3] Each player is initially endowed with 500 ECU to avoid any net loss. The game consists of two sequences of nine periods each. Each sequence corresponds to one of two treatments: the "Random" and the "Performance" treatments. The order of treatments was counterbalanced across sessions.

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[1] A negative link has also been found between aging and entrepreneurship (Lévesque and Minniti, 2006). For a survey of studies on the aging workforce from a business management perspective, see Streb et al. (2008).

[2] Burks et al. (2010) suggest that people might behave overconfidently in order to signal a positive image of themselves to others. See also Benabou and Tirole (2002).

[3] The differences with their entry game are the number of players, the information on the distribution of group members in terms of generation, the payoff matrix, the number of periods, the task used to elicit performance.