

# Characteristics of the demand for private long-term care insurance in France : a step by step estimation algorithm in an analytical CRM context <sup>1</sup>

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**Abstract.** Private long-term care insurance is underdeveloped in European countries. To understand this actual market failure, we study the long term care insurance demand characteristics using banking data and estimate the probability of subscription. Thanks to a logit model and an original step by step estimation algorithm, we show that belonging to upper classes reduces this probability; that women belonging to farmer, worker or employee classes, and having some asset, have 5 times more chances to subscribe (same result for the oldest individuals of this category). Thus insurers are in a favourable position to develop their long-term care portfolio: population ageing effect will make currently defined targets more representatives during the next twenty years. This paper, the sole empirical one using French data, provides insurers with a key decision-making econometric tool for calculating the probability to subscribe, that can be applied to their own portfolio.

## 1 Introduction

Recent studies show that the incidence of long-term care (LTC) increases strongly with age (*cf.* Gisserot and Grass (2007)). In France, the probability that an individual who has reached the age of 65 will use LTC services before his or her death is 40% (OECD (2005)). The ageing of the population is therefore likely to increase the demand for LTC even though this increase will be tempered by the increase in life expectancy without disability (Gisserot and Grass (2007), Duée and Rebillard (2004)). For individuals cared for at home, this amounts to a cost which fluctuates between €340 a month for light LTC and €5,300 a month in the event of maximum physical and psychological dependence (Ennuyer (2006)). On average it amounts to €1,500 a month (Loones et al. (2005)). Quite apart from the loss of well-being caused by the unexpected onset of this state, LTC represents a highly significant financial risk burden by elderly people. Should there be an increase in the number of people with LTC needs as well as an increase in the average duration of LTC, this would raise a number of concerns, particularly concerning the long-term balance of public finances. In France, the social benefits for LTC are called APA (Personal Independence Allowance) and are paid by the French Departmental General Councils.

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