

Saving for Old Age: Longevity Annuity Buying Intention of Italian Young Adults

This is the peer reviewed version of the following article:

Original:

Nosi, C., D'Agostino, A., Pagliuca, M.M., Pratesi, C.A. (2014). Saving for Old Age: Longevity Annuity Buying Intention of Italian Young Adults. JOURNAL OF BEHAVIORAL AND EXPERIMENTAL ECONOMICS, 51, 85-98 [10.1016/j.socec.2014.05.001].

Availability:

This version is available <http://hdl.handle.net/11365/1260756> since 2024-05-13T12:21:36Z

Published:

DOI: <http://doi.org/10.1016/j.socec.2014.05.001>

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(Article begins on next page)

Accepted Manuscript

Title: Saving for Old Age: Longevity annuity Buying Intention of Italian Young Adults

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PII: S2214-8043(14)00055-X
DOI: <http://dx.doi.org/doi:10.1016/j.socec.2014.05.001>
Reference: JBEE 35

To appear in:

Received date: 30-7-2013
Revised date: 27-4-2014
Accepted date: 4-5-2014

Please cite this article as: Nosi, C., D'Agostino, A., Anna Maria Pagliuca, M., Alberto Pratesi, C., Saving for Old Age: Longevity annuity Buying Intention of Italian Young Adults, *Journal of Behavioral and Experimental Economics* (2014), <http://dx.doi.org/10.1016/j.socec.2014.05.001>

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ABSTRACT

The aim of this study was to investigate the longevity annuity buying intention on the part of Italian young adults aged 25 to 35 by adopting the Theory of Reasoned Action. Using a structural equation modeling approach based on the method of Partial Least Squares, a confirmatory test of the model construct validity was performed, including behavioral beliefs and normative beliefs. The results obtained from 7,480 Italian young adults revealed that the theory of reasoned action had predictive power for the intention of buying longevity annuities. The cause-effect relationship of behavioral and normative beliefs was confirmed. Intention to purchase a longevity annuity was determined to be affected by both attitude toward buying and the subjective norm with a greater influence of social pressure over attitude. Finally, results showed that intention to buy longevity annuity policies was significantly moderated by three background factors, namely, gender, annual household income, and educational attainment. Research, policy, and managerial implications of the findings are discussed and suggestions for further research provided.

Key words: Theory of Reasoned Action, Buying intention, Young adults, Saving, Longevity annuity, Italy

1 INTRODUCTION

In Italy, as in many other European countries, pensions and pension policies are high-priority issues on national agendas, representing one of the highest items of public expenditure (Feldstein and Siebert, 2002). Pensions are a subject of great interest also because they concern all citizens of a country. Both “active” citizens, i.e., the major financers of a national welfare system who will be assigned a pension in the future, and “inactive” citizens, i.e., today’s pensioners and youth who are still waiting to enter or have only recently entered the labor force, will hopefully benefit from a pension in a more distant future (Botta, 2012).

Since the early 1990s, Italy has undergone radical changes in the regulations of the public pension system aimed at mending its main drawbacks and improving sustainability in the long run. The reforms were intended to recover the national economy through a significant reduction of benefits by increasing, particularly for younger people, individual responsibility for the accumulation of retirement wealth (Franco, 2002).

Two major changes have been introduced by these reforms (Fornero and Monticone, 2011), primarily, the replacement of a defined benefit by a defined contribution method. According to the first type of plan, pension benefits are predetermined and based on a formula involving salary history and length of employment. Until the reforms, in Italy, the average pension provided by the public welfare system to citizens accounted for approximately 80% of the salary earned in their late working life (Rodà, 2006). The defined contribution method, instead, fixes benefits based on “actuarial equivalence”, namely to the (capitalized worth of) payroll taxes that people contribute throughout their entire working lives and to workers’ retirement age. This practice results, on average, in a much lower and more uncertain replacement rate (the ratio of a person’s first pension to his or her last wage) compared to former and actual benefits in payment, which are quantified based on late-career remunerations. As a consequence of the application of these new rules, official estimates (Ministero dell’economia e delle finanze, 2007) forecast that between 2011 and 2050, the ratio between the average pension and the average salary in Italy will shrink by 30%. At the same time, the average replacement rate will decrease from 70 to 50%.

The second great change concerns pension funds. The decreasing availability of public financial resources allocated to retirees has cleared the path for private social security plans. These plans

have acquired paramount importance in restoring a satisfactory level of future pension benefits that have a major impact on the well-being of the elderly (Bender, 2012). In Italy, joining a privately owned pension plan is performed on a voluntary basis and encouraged by the government through tax incentives (Guazzarotti and Tommasino, 2008).

In line with what is happening all over the world, despite established public measures to encourage Italian citizens to invest in privately managed pension plans, participation rates at the country level are still disappointing. Regarding Italian workers, *Associazione Nazionale fra le Imprese Assicuratrici* (National Association of Insurance Companies, ANIA, 2012) data show that in 2011, only 24% participated in a private pension plan. The participation of young employees aged 25-34 was even lower, with only 16.9% of them having invested in an integrative pension plan.

According to Brown and Warshawsky (2001), the extent to which individuals insure themselves against outliving their savings (the so-called “longevity risk”) in defined contribution systems is significant for several reasons. Firstly, increasing average longevity in all developed countries raises the issue of guaranteeing sufficient resources throughout people’s advanced life. Indeed, it has been ascertained that the adequacy of later life income directly influences elderly poverty rates. Second, if people fail to provide adequate resources to ensure themselves a comfortable retirement, social support systems will be burdened by increasing financial pressure due to the greater reliance that the elderly will exert both on public and private assistance structures. Lastly, the way people decide to insure themselves against longevity risk today can have a significant impact on the amount of intergenerational transfers within a given economy, affecting the wealth distribution of future generations.

Understanding the factors influencing the intention to enroll in a private pension plan through the purchase of a longevity annuity on the part of young people – greatly affected by the recent pension system reforms – could therefore constitute an important element in providing recommendations to the policy maker and private companies to favor the adoption of wide-spread virtuous behaviors among citizenships.

Accordingly, this study analyzes the factors influencing the intention to purchase longevity annuities on the part of Italian young adults aged 25-35 using the framework of the Theory of Reasoned Action (TRA). First, it provides a test of the TRA as applied to the understanding of the longevity annuity purchasing intention on the part of Italian young adults. Second, a confirmatory test of the construct validity of the theoretical model using a PLS-Path Modeling (PLS – PM) approach (Wold, 1982; 1985; Lohmoller, 1989), including behavioral beliefs and normative beliefs of the theory, is performed. Third, the Ajzen and Fishbein’s (1972) standpoint concerning the independence of the attitudinal and normative factors is tested, verifying whether the constructs of subjective norm and attitude are correlated. Finally, the moderating effect of four individual characteristics, namely gender, income, education, and place of residence, on behavioral intention to purchase longevity annuities is tested. Given that the value of attitudinal and normative factors, as well as their role in predicting behavioral intention, are said to vary from individual to individual depending on multiple social, cultural, and personal traits (Xu et al., 2004), the influence on longevity annuity purchasing intention of gender, income, and education, as well as place of residence, appear to be relevant aspects to investigate.

The paper is organized as follows: First, a literature review of the main contributions of a financial type concerning annuity purchasing behavior is provided. Second, a brief review of the framework of the TRA is presented. Moreover, the conceptual model is described, research hypotheses are formulated, and the research design used to empirically test the hypotheses is outlined. Subsequently, the results of the study are described. Finally, research, policy, and managerial implications are discussed, and limitations of the study, as well as suggestions for further research, are provided.

2 ANNUITY PURCHASING BEHAVIOR

Until a few years ago, annuity research focused almost exclusively on immediate annuities (Hu and Scott, 2007). These are contracts that are acquired with a single lump-sum disbursement and, in exchange, provide a certain income whose payments start straightaway after the initial premium. Such contracts are particularly suitable for pre-retirees or retirees who have almost/already ended their working life, in need of financing their current consumption, and who are conscious they might face the risk of outliving their savings in the future. This situation explains why a greater part of the literature investigates annuity purchasing behavior of the elderly. In recent years, however, the insurance industry has been launching innovative products on the market, one of which is the so-called “longevity annuity” (also labeled “delayed payout annuity”), a contract purchased today that defers payments until some future point in time (e.g., when the buyer reaches a certain age). In the specific case of the longevity annuity examined in this research, the contract also provides a designated beneficiary with a lump-sum payment in the case of premature death of the annuitant. In this way, in addition to ensuring an income throughout the policyholder’s advanced life, this annuity product represents a suitable way to leave a financial legacy to close relatives or to whomever is elected as a beneficiary by the subscriber.

Longevity annuities are especially suitable for younger generations, who being more heavily affected by recent pension system reforms, will face a higher risk that their savings will not be adequate to ensure themselves a comfortable retirement.

The traditional finance paradigm explains peoples’ financial decisions based on the assumption that they are well-informed economic agents who behave rationally with the aim of maximizing their self-interest (Statman, 1999). Accordingly, it is presumed that people can understand and evaluate information regarding available options, correctly assess and weigh these choices, and then make an advised decision based on pondering the alternatives (Mitchell and Utkus, 2003). Within this paradigm, the life-cycle model of saving theorizes that people are rational planners of their consumption and saving requirements, considering also the interests of their successors (Modigliani and Brumberg, 1954). Some researchers have noted that saving generally increases with age (Furnham, 1985; Katona, 1975; Mirer, 1979) and income (Chang, 1994; Yu and Hanna, 2010) and is positively related to education level (Avery and Kennickell, 1991; Solmon, 1975) and overall wealth (Hefferan, 1982).

According to this approach, it is ascertained that annuitization enables rational consumers to remove or at least reduce their individual longevity risk (Yaary, 1965). Rational choice theory predicts that people should annuitize a considerable portion of their wealth (Modigliani, 1986). Hence, one would expect the annuity market to be sizeable (e.g., Benartzi, Previtro and Thaler, 2011) (analogously to that of any substitute financial or insurance product able to reduce people’s longevity risk) and growing along with the widespread development of defined contribution systems (e.g., Stewart, 2007). Instead, currently, the individual demand for annuities is still negligible in most advanced countries and only slowly increasing over the last few years (for a picture of the annuity market development see: James and Song, 2002; Mackenzie, 2006). The reluctance of people to purchase annuity products has been labeled the “annuity puzzle” in the literature (Lown and Robb, 2011).

To explain annuity market anomalies, economists (see Finkelstein and Poterba, 2004) have identified some obstacles that have prevented people from purchasing annuities, such as bequest motives; loss aversion; annuitization from other sources, such as public-sector social security programs, bonds, and certificates of deposit; the need to save money for unexpected necessities, such as health-related and long-term care expenses and annuity pricing (Friedman and Warshawsky, 1985).

Given that consumers are far from being rational decision makers who act with the aim of maximizing their personal interest and who are able to process all available information, in recent years, numerous studies have noted that market biases cannot be explained with traditional finance alone (see Barberis and Thaler, 2003). To supplement the modern theories of finance, the paradigm of behavioral finance has been developed. Combining psychology and economics with finance

theory, behavioral finance explains the behavior of the different agents in financial markets, taking into account the impact human behavior has on the investment process (Kahneman and Tversky, 1979). Such a research field appears to be particularly relevant for analyzing annuity buying behavior in the renewed public pension systems; whereas in the defined benefit system, the determinant of success was investment performance only, the success of modern defined contribution systems rests on a combination of investment performance and the human element. Furthermore, given that the responsibility of accumulating retirement wealth is increasingly shifting from employers to employees, the human element is essential to comprehending how people manage (or fail to manage) their savings and crucial to developing effective solutions and provisions at the policy level.

Among the factors that have been identified as affecting annuity buying behavior, some have also been found to be particularly significant (Tarpia and Yermo, 2007). Choice and information overload, namely the availability of too many annuity products on the market, confuses potential buyers by ultimately discouraging them from annuity purchase. Framing effects relate to the consequences that different wording has on behavior. The literature has proven that individuals' preferences for annuities vary according to how the annuity offer is presented (Agnew et al. 2008; 2008a). A low annuity purchasing level could depend on erroneously framed information provided to support a buyer decision and could be increased by policy interventions aimed at providing consumers with pertinent and appropriately outlined information (Altman, 2012). Furthermore, individuals tend to lack strong preferences in financial contexts in relation to both investment portfolios and companies (Benartzi and Thaler, 2002). Particularly in Italy, for example, a lack of confidence in insurance companies has been identified as the major reason for not purchasing life insurance policies (Ernst and Young, 2012). Some studies have explored the relationship between annuity purchasing behavior and socio-demographic and other personal characteristics of individuals. Willingness to annuitize appears to increase with income and educational attainment, as well as health, but to decrease with household size (the larger the household, the lower the likelihood of annuitizing) (Gardner and Wadsworth, 2004). In general, women tend to be more risk adverse (in addition to less financially literate) than men; therefore, women more often opt for a retirement plan rather than other types of more hazardous investments (Agnew *et al.*, 2008). The phenomenon of "myopia", namely choosing to spend available resources for financing present consumption needs rather than saving for the future, retirement planning included, has been said to pertain to younger people, especially those characterized by low perceived life expectancy and low earnings (Weyman *et al.*, 2012). Finally, recent studies have focused on consumer understanding and knowledge about pensions and investment choice, so-called "financial literacy". Financial knowledge is said to influence individuals' involvement in financial planning (Lusardi and Mitchell, 2007) and to be positively related to the likelihood of engaging in retirement planning activities (van Rooij, Lusardi, and Alessie, 2008). Similarly to what was found by Dvorak and Hanley (2010), with specific reference to the Italian context, Fornero and Monticone (2011) found that females and less-educated people, as well as individuals living in the south of the country, possess the lowest level of financial literacy and show the lowest inclination to enroll in privately held pension funds.

3 THEORETICAL FRAMEWORK

3.1 The Theory of Reasoned Action

The Theory of Reasoned Action (TRA) belongs to the group of psychological theories that have been elaborated to predict, explain, and modify behaviors, commonly referred to as "social cognition models". Such models claim that a small number of affective and cognitive elements, namely attitudes and beliefs, are the proximal determinants of human behavior (Sutton, 2002). Today, social cognitive theory is applied in multiple areas, such as public health, education, mass media and marketing, just to cite a few (Miller, 2005).

The TRA was designed to provide a parsimonious explanation of motivational and informational influences on human behavior (Conner and Armitage, 1998). The TRA is a causal model able to identify the determinants of behavioral intention (and eventually actual behavior) and to describe how these variables are combined. The utility of the theory derives not only from its predictive power but also from its capability to explain the underlying causal processes that lead people to engage in specific actions. In the field of consumer behavior, the application of an explanatory model such as the TRA can provide useful indications about the possible policy and managerial interventions to be targeted, as well as suggestions for the type and content of intervention programs (Sutton, 1998). Though employed predominantly in the field of behavioral prediction rather than attitude modification, in fact, the model has evident implications for the successful development of persuasive messages (Petty *et al.*, 2003).

Furthermore, the theory boasts important advantages compared to previous frameworks aimed at explaining individuals' behavioral choices. Prior to the introduction of the TRA, social psychology investigations found attitudes to be very poor predictors of people's real behavior. These results led to increasing skepticism about attitudes and their utility in enlightening individual behavioral decisions. The TRA tried to solve the possible inconsistencies that characterized the adopted investigation models, based on the assumption that attitudes did play a major role in individual behavior by representing strong determinants of human volitional actions (Ajzen and Fishbein, 1977). First, the theory assumed that attitudes were multidimensional constructs, whereas most measurement techniques used in previous studies resulted in single scores representing the individual (positive or negative) evaluation of an object. These single evaluative scores were not able to capture the comprehensive complexity of attitudes, ultimately reflecting only one (cognitive, affective, or conative) (Rosenberg and Hovland, 1960) attitudinal component. Second, although the majority of previous studies focused on the attitude that individuals had toward target objects, the TRA concentrated on the attitude toward the behavior. The shift of the focus from the object to the specific action provided more reliable results, revealing a strong correlation between attitude and overt behavior only when the attitudinal and behavioral measures showed a high degree of specificity, matching with respect to action, target, context, and time frame – the so-called correspondence principle (Cialdini, Petty and Cacioppo, 1981).

Figure 1 – The theoretical model

The core concept of the TRA is intention, described as an individual's motivation in his or her conscious and deliberate decision to make an effort in performing a specific behavior (Ajzen, 1985). According to the model, the majority of human behavior can be predicted based on intention given that such behaviors are under volitional control and people can decide at will to perform or not to perform them. In the TRA perspective, behavioral intention is influenced by two conceptually independent components: Attitude toward the behavior, namely “the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question” (Ajzen, 1991, p. 188), and the subjective norm, which is “the perceived social pressure to perform or not to perform the behavior” (p. 188).

Attitudes are personal components, resulting from the individuals' assessment of costs and benefits that derive from engaging in the behavior; such an evaluation is labeled a “behavioral belief” in the theory. Individuals are said to consider the consequences of alternative actions before taking them, and they are more likely to engage in actions they associate with desirable outcomes. The subjective norm is a social component and arises from the perceptions of salient referents' opinions about what an individual should (or should not) do. Such perceptions are termed “normative beliefs” in the theory, and salient referents are said to be significant others, such as family members, friends, or colleagues, who are able to influence a person's decisions (East, 1997). The TRA postulates that

individuals' behavioral intentions are more likely to be influenced by important referents' opinions when individuals are more willing to be influenced by these specific referents (see Figure 1).

The TRA is a renowned and extensively referenced expectancy-value theory of behavior (Sutton, 1998). Research carried out investigating the relationships among attitudes, subjective norms, behavioral intentions, and actual behaviors is copious. Several meta-analyses have consistently provided support for the validity of the model, finding large-effect sizes both in norms and attitudes predictive power for intentions, whereas no less than moderate effect sizes have been found for intention ability to predict overt behavior (among others: Riddle, 1980; Godin et al., 1987; Schmelling, 1985; Blue, 1995; Stewart and Roach, 1998; Hale *et al.*, 2002).

Due to its strong predictive power, therefore, the TRA has been widely utilized as a model to forecast behavioral intentions and behaviors in multiple fields of investigation both in its traditional and broadened versions (i.e., Theory of Planned Behavior) (Sheppard, Hartwick, and Warshaw, 1988): coupon usage (Shimp and Kavas, 1984); smoking (Budd, 1986); dental hygiene (McCaul, O'Neill, and Glasgow, 1988); voting behavior (Singh et al., 1995); AIDS-preventive behavior (Fisher, Fisher, and Rye, 1995); unethical behavior (Chang, 1998); and more recently, renewable energy use (Bang et al., 2000); health behavior (Kim et al., 2004); physical activity (Fitzmaurice, 2005); life insurance purchase (Omar, 2007); monogamy and condom use (Beadnell et al., 2008); and depositors' withdrawal behavior (Abduh, Duasa, and Omar, 2011).

Some authors have questioned the efficacy of the theory, pointing out that there might be a discrepancy between intention and actual behavior. In other words, behavioral intention may not necessarily be a truthful and reliable measure of behavior because people do not always translate intentions into actions. Among the causes that could influence the intention-behavior relationship, there are the specificity of measurements used to investigate the phenomenon, individual characteristics, and situational factors (Wong and Sheth, 1985). Multiple theoretical and empirical attempts have then been made to increase the predictive power of the model by incorporating additional explanatory variables. Most likely the most renowned effort is the one undertaken by Ajzen (1991) that has brought about the development of the Theory of Planned Behavior, which adds perceived behavioral control as an immediate determinant of intention. Conceptually related to self-efficacy (Bandura, 1977), perceived control represents individuals' perceived difficulty or ease (depending on the possession of necessary information, money, skills, etc.) in engaging in a specific action. Despite these worthy attempts, though, the results of meta-analyses aimed at verifying the increase in the prediction ability of these broadened models compared to the original TRA have been contradicting (Armitage and Conner, 2001).

Consistent with the recommendations provided by the literature, however, precautions have been taken in the present study to reduce the possible intention-behavior discrepancy. First, the volitional nature of the analyzed behavior should increase the reliability of intention as a predictor of overt behavior. Purchasing a longevity annuity, in fact, largely depends on the willingness of people and does not belong to the type of behaviors that can be labeled as spontaneous, habitual, or impulsive. Such actions are excluded from the explanatory scope of the TRA because their engagement might not involve an aware decision on the part of the actor or because their achievement might not be voluntary (Hale *et al.*, 2002). Intention is said to be the best predictor of behavior when the behavior is under volitional control (Frymier and Nadler, 2013). Furthermore, measures of intention to purchase a longevity annuity satisfy the correspondence principle, being consistent with the target of the behavior, the action, the context of the behavior, and the time period, as stated by Ajzen and Fishbein (1980). The lack of corresponding levels of specificity in the measures, in fact, has been indicated as a possible reason for the failure of some analyses to find significant intention-behavior relationships (Ajzen and Fishbein, 1977). Finally, intentions to buy a longevity annuity have been operationalized as the likelihood of performing the behavior (see paragraph 4.2). According to Warshaw and Davis (1985), measuring intentions as the "probability" (or the likelihood) of performing a behavior, rather than the extent to which a person plans or is determined to engage in that behavior, increases their utility as behavior predictors. In this way, when enquired, people tend

to consider alternative options and a wider array of elements that could influence their actions, such as their capability to engage in the behavior, past behavior, and situational and environmental factors that might inhibit or simplify the possibility of engaging in those actions.

3.2 Conceptual model

The overall objective of this study was to analyze the factors influencing the intention to purchase longevity annuities on the part of Italian young adults aged 25-35 using the framework of the TRA. This section discusses how behavioral intention is related to its predictors (attitude and subjective norm) and how these antecedent variables are associated with belief constructs (behavioral and normative beliefs). The analyzed product is an individual retirement plan (longevity annuity). It is a financial contract in the form of an insurance product according to which an issuer, in this case an insurance company, makes a series of future payments to the purchaser (the annuitant) in exchange for a series of regular payments, prior to the beginning of the annuity. In the event of the premature death of the policyholder, the insurer attempts to provide the designated beneficiaries a lump-sum payment whose amount corresponds to the capitalized worth of the paid money.

According to the TRA, purchasing a longevity annuity can be predicted from the purchasing intention, which in turn can be determined by the individual's attitude toward the longevity annuity purchase and his or her overall perception of what important referents think he or she should do (to purchase or not to purchase the longevity annuity). Given that the TRA predicts intention to perform a behavior based on individuals' attitudes toward the behavior rather than on the attitudes toward the product or the service itself (Ajzen and Madden, 1986), the intention to engage in the actual purchase of a longevity annuity was investigated.

For a number of reasons, the TRA appeared appropriate for the purpose of investigating and predicting the longevity annuity purchase intention of young adults. First, to the best of the authors' knowledge, no previous attempt has been made to investigate consumer purchasing intention or behavior for longevity annuities adopting the TRA framework. Its application to such a field of investigation could contribute to enriching the literature on this topic through an innovative research approach. Second, longevity annuity purchase appears to be the result of an individual's deliberate decision, therefore representing the behavior that a person can decide at will to perform or not to perform. The TRA is considered to be appropriate to explaining behavior under conditions in which volitional control is high. Finally, because the model takes explicitly into account the role that the normative component has in influencing behavioral intention, the TRA appears to be particularly suitable for investigating the longevity annuity purchasing intention of young adults for three main reasons. First, because social pressure appears to be especially significant in service settings, where the credence attributes of services may lead to an increasing reliance on important referents' opinions in the appraisal of a service (Bansal and Taylor, 2002). In the case of high-credence services, salient people's feelings could play an important role in influencing an individual regarding whether to purchase a service. Second, given that the analyzed subjects are young adults, they are presumably significantly affected by social pressure in their decision-making processes, particularly by their family (Feltham, 1998). Third, this observation appears to hold true especially in Italy, where both family and social relationships are thought to be very strong (D'Agostino and Regoli, 2013). Recognizing that the country is dominated by a collectivist culture (Hofstede, 2001), the subjective norm of investigated individuals is expected to play a relevant role in the formation of purchase intention (Bagozzi *et al.*, 2000). Based on a literature review and the research questions addressed, five main hypotheses were developed.

To understand individuals' behavioral intentions, attitudes toward engaging in behaviors and subjective norms have to be measured. However, to fully comprehend intention, antecedents of both overall attitude and subjective norm have to be investigated. The determinants of the attitudinal and normative components of the model are labeled behavioral beliefs and normative beliefs, respectively. The former are a person's perceptions about the consequences that may derive from engaging in a given behavior: the more positive the expected consequences, the more favorable the

attitude toward the behavior. The latter represent a person's perceptions about what salient referents think they should do relative to a given behavior, namely whether to perform the behavior. The more a person thinks that important referents would approve of his or her performing the behavior in question, the greater the influence of the subjective norm on engaging in the behavior. These assumptions are tested in the context of young adults' purchasing intention for longevity annuities. Thus, the following hypotheses are proposed:

- H1: Behavioral beliefs positively influence attitude toward longevity annuity purchasing behavior.
- H2: Normative beliefs positively influence subjective norm.

The relative importance of the attitudinal and normative factors in influencing behavioral intention varies with the behavior to be performed, in addition to the situation and the personal characteristics of individuals in action. In this study, the TRA model is tested to comprehend longevity annuity purchase intention. Thus, the following hypotheses are advanced:

- H3: Attitude toward longevity annuity buying behavior positively influences the intention to purchase a longevity annuity.
- H4: Subjective norm positively influences the intention to purchase a longevity annuity.

Ajzen and Fishbein's (1972) position concerning the conceptual independence of the attitudinal and normative components of the TRA model has been widely questioned; whereas the theory posits that attitudes and subjective norms exert empirically unconnected and distinct influences on intention, and numerous studies adopting the TRA (e.g., Fitzmaurice, 2005; Singh et al., 1995) do not test such an independence, there is compelling evidence that subjective norms and attitudes do have a relationship (Park, 2000). More specifically, people with positive subjective norms toward a behavior are likely to hold positive attitudes toward engaging in that behavior. The argument supporting such a position is that the influence of others on individuals' behaviors can be identified as either a normative or a behavioral belief (Miniard and Cohen, 1981). Through two ad hoc experimental controls, Miniard and Cohen found that in the one designed to influence the subjects' attitudes, their subjective norms were also affected, and in the one designed to influence the individuals' subjective norms, their attitudes were affected as well. The conclusion of such experiments was that the attitude-related and normative constructs were likely to be correlated. Compliant with this view, the assumption regarding the independence of the attitudinal and normative components of the model was tested in this study positing that the perceived social pressure to buy a longevity annuity will influence the individuals' attitudes toward the buying behavior. Thus, it is hypothesized:

- H5: The subjective norm positively influences attitudes toward longevity annuity purchasing behavior.

3.3 The moderating effect of background factors

Ajzen and Fishbein (2005) list multiple "background factors", such as age, gender, ethnic group, income, educational attainment, personality, and intelligence, which might be at the origin of the individuals' behavioral and normative beliefs, consequently reverberating on attitudes and subjective norms, and eventually on behavioral intention. Given the fact finance literature has highlighted the relevance of gender, income, and education, in addition to place of residence, in influencing annuity purchasing behavior, the moderating effect of gender, annual household

income, educational attainment, and place of residence in forming behavioral intention to purchase a longevity annuity is tested on each link between the variables explaining the formation of behavioral intention (Figure 2).

Figure 2 – Conceptual framework of the moderating and mediating variables

Thus, 4×5 hypotheses have to be tested to assess the influence of each of these four variables on the strength and/or the direction of the five paths. Let γ_i ($i=BB \rightarrow ATT, NB \rightarrow SN, ATT \rightarrow BI, SN \rightarrow BI, SN \rightarrow ATT$) and V_j ($j=\text{gender, annual household income, educational attainment, place of residence}$) denote, respectively, the i th path and the j th variable. Therefore, the research question “to be a moderating variable” has been converted to the following null and alternative hypothesis:

H_0 : The individual characteristic V_j does not moderate the relationship γ_i .

H_1 : The individual characteristic V_j moderates the relationship γ_i .

for each j and i . No direction was been conjectured in advance to be the direction of the moderating variable influence to be assessed through the test.

4 RESEARCH DESIGN

4.1 The sample

Data for this research were collected by a survey conducted in the first six months of 2012. Trained investigators were recruited to administer the questionnaire. Investigators were instructed on the specific requirements of the project, as well as the general requirements of in-person interviewing for data collection (i.e., who should be interviewed to gather useful and valuable information and how to find the interviewees). During the training, the investigators were also outfitted with the materials and instructions to follow the appropriate protocol for conducting in-person interviews. Investigators were volunteers, recruited through networking by the research team members, and selected by senior researchers after an interview aimed at verifying whether they possessed the necessary skills to perform the interviewing activity. Afterwards, they were required to submit the face-to-face questionnaire to friends and acquaintances. Such a convenience sampling method was applied due to constraints in budget and time. More specifically, people were chosen for the research because they were readily available and met the criteria for being included in the sample¹. During the fieldwork data collection process, measures were adopted to counteract the possible biases coming from the interviewers being somehow related to the respondents (friendship or acquaintance); for example, the participants were informed that the study was aimed at improving knowledge on this specific issue and that their honest views were most important. Overall, 8,352 questionnaires were returned. After cleaning the data², 7,480 questionnaires were considered valid for elaboration and analyzed.

Given that units were not selected randomly, a weighting adjustment technique was attempted to improve the accuracy of the survey estimates by using auxiliary information (Bethlehem, 2010). In particular, a post-stratification procedure was used to adjust for socio-demographic (gender, age, education, and place of residence) differences between the sample and the population (Cervantes and Brick, 2009). The auxiliary survey is derived from the 2009 wave of the Italian data of the

¹Accordingly, information-rich cases were collected enabling the investigation of issues of central importance to the purpose of this research.

²The data cleaning process included format checks, completeness checks, reasonableness checks, limit checks, and review of the data to identify outliers. All major errors and inconsistencies were detected and removed (McDaniel and Gates, 2006).

European Statistics on Income and Living Conditions (EU-SILC), representative of the Italian population. Table 1 summarizes the socio-demographic information from both surveys. The basic idea was to stratify the sample into a number of cells, based on characteristics of the population deemed important, and then to give more weight to respondents in under-represented groups and less weight to those in over-represented groups. Accordingly, these weights were used in the following elaborations.

Table 1 – Socio-demographic characteristics of the sample and population

4.2 The Measures

The questionnaire used in the study consisted of four sections: the first included items designed to assess the belief constructs; the second provided items aimed at investigating the predictor constructs (attitude and subjective norm); the third included the buying intention measures; and the fourth provided questions on socio-demographic information. Multiple-item scales were developed for each of the five investigated constructs. Behavioral intention was defined as the purchase (action) of a longevity annuity policy for self (context) within the next two years (time frame).

The measurement items for behavioral beliefs and salient referents were identified following an elicitation study and a review of the relevant literature. According to Ajzen and Fishbein (1980), in fact, new sets of beliefs and significant others should be elicited for each unexplored context and population. As an elicitation method, focus groups were used. The groups consisted of insurance industry professionals, academics (experts in the research field of public and private pension systems, as well as private life insurance), and longevity annuity holders aged 25-35. In total, four focus groups composed of six participants each were organized. Discussions lasted between an hour and a half and two hours and were conducted by an expert facilitator. They were audio recorded and later transcribed. Two researchers analyzed the content of the scripts of the focus groups to rank the order of the investigated items and selected the most frequently mentioned for use in the final questionnaire.

Beliefs strength corresponds to the subjective probability that a specific behavior will produce a certain result. Therefore, behavioral beliefs toward purchasing a longevity annuity were assessed using a four-item, seven-point Likert scale, where 1 = strongly disagree and 7 = strongly agree, measuring the interviewees' level of agreement with the statements illustrating the possible consequences of buying a longevity annuity identified by the participants in the focus groups (e.g., live comfortably during old age, and save money regularly). The subjective norm was measured by obtaining the respondents' level of agreement to the following two statements: *My parents think that I should purchase a longevity annuity within the next two years. My friends think that I should purchase a longevity annuity within the next two years.* A seven-point Likert scale, where 1 = strongly disagree and 7 = strongly agree, measured the respondents' level of agreement with the two statements. Attitudes toward the behavior of purchasing a longevity annuity were measured using a four-item, seven-point semantic differential scale: 1 (harmful) to 7 (beneficial); 1 (foolish) to 7 (wise); 1 (unnecessary) to 7 (essential); 1 (difficult) to 7 (easy). Intentions were operationalized as the likelihood that one will perform a behavior. Three items were used to assess behavioral intentions. A seven-point Likert scale, where 1 = extremely unlikely and 7 = extremely likely, measured the intention of respondents to engage in purchasing a longevity annuity.

The outcomes of the pilot test with 50 people aged 25-35 showed that the questionnaire had an appropriate level of reliability. Minimal rewording was performed to improve question clarity.

The items and the theoretical constructs are all displayed in Table 2.

Table 2 – Items and theoretical constructs

4.3 Statistical methodology

A structural equation modeling approach based on the method of Partial Least Squares (PLS) (Wold, 1985), referred to as PLS Path Modeling (PLS – PM) in the literature (Henseler, Jensen, and Sinkovics, 2009), was used to assess the cause-effect relationships among observed and latent variables. Few relevant reasons supported such a methodological decision. First, the greater part of the empirical research aimed at testing the TRA model is based on regression or correlation analyses (the so-called first generation techniques) to test the influence of certain independent variables on some of the components of the model. Although useful for theory testing, these techniques appear to be incomplete because they do not provide a simultaneous assessment of the different paths (they test only one layer of linkages between independent and dependent variables at the same time) and they test relationships among manifests rather than latent variables (Bentler, 1980). Structural modeling, (a second generation technique) instead, appears to be more appropriate to experimentally test a mediational model, such as the TRA. The causal modeling of latent variables, in fact, enables the simultaneous testing of all of the paths of the model. Furthermore, it allows to test any possible relationship between mediating and dependent variables explicitly (Vallerand *et al.*, 1992).

In relation to the choice of the structural equation modeling technique adopted in the present study, a few further considerations have to be made. Compared with the more widely used Structural Equation Modeling via maximum likelihood (SEM – ML) (Jöreskog and Wold, 1982), PLS – PM has been preferred due to different reasons. Although SEM – LM requires that specific underlying assumptions be satisfied to ensure accurate inferences, that is, observations drawn from a continuous and multivariate normal population, a sufficiently large sample size, totally random missing data, as well as correct model specification, PLS – PM is far less restrictive and appeared to be more suitable for the present study. The PLS technique, in fact, is a distribution-free approach (it does not rely on data belonging to any particular distribution) and was considered a more appropriate methodology in this study, where the assumption of normality underlying the constructs constituted a very questionable hypothesis. Cassel, Hackl, and Westlund (1999) demonstrated that PLS is fairly robust in relation to numerous inadequacies (e.g., indicator skewness or multicollinearity, structural model misspecification) and that the latent variable scores constantly conform to the true values. Lastly, the PLS technique is increasingly used in conducting social and behavioral marketing research, as well as educational research given that, in addition to providing a robust way of analyzing survey data (Chin, 1998; Chin *et al.*, 2003), it is capable of analyzing both reflective and formative indicators.

In detail, PLS – PM is an iterative algorithm that separately estimates two models. In the first step, a measurement model relating the items to their own latent constructs is estimated using the PLS algorithm, and in the second step, a structural model relating endogenous latent constructs to other latent constructs is carried out by OLS regression. In this study, a reflective measurement model was supposed, i.e., indicators were regarded as consequences of the latent variable to which they belong (Jarvis *et al.*, 2003). XLSTAT-PLSPM (XLSTAT, 2012) was run on the standardized data, using sample weights, the reflective mode, and a centroid scheme (for a detailed description, see Lohmöller, 1989). Because PLS Path Modeling does not rely on distributional assumptions, a bootstrapping procedure (Chatelin, Esposito Vinzi, and Tenenhaus, 2002; Chin, 2010) was used to assess the fit of the structural model (1,500 re-samples were used to generate p-values). Together with this re-sampling technique, a Q^2 test (Stone, 1974) based on cross-validated redundancy (Fornell and Cha, 1994) was used to assess the predictive relevance of the endogenous constructs. This test is an indicator of how well observed values are reproduced by the model and its parameter estimates. A value greater than 0 implies that the model has predictive relevance, whereas a Q^2 less than 0 suggests that the model lacks predictive relevance.

Once the support for the main effects was found, the moderating effect of background factors (gender, annual household income, education, and place of residence) was tested. The purpose of this analysis was to determine whether these socio-economic characteristics moderate any of the

relationships in the model used to predict the intention to buy a longevity annuity. To test the effects of the moderating variables, multi-group structural equation modeling analysis was performed (Sörbom, 1974) via a permutation procedure (Chin and Dibbern, 2010) in which a subset of all possible data permutations between the sample groups was constructed. This test offers a good nonparametric alternative to the well-known and more widely used t-test. This technique is considered a distribution-free test in that it requires no parametric assumptions. In particular, the test is based on the comparison of the statistics $\Delta_{i, \text{obs}(j)}$ (the observed difference in the generic i th path between a-priori formed groups for the j th moderating variable V_j) and $\Delta_{i, \text{perm}(k)}$ (differences in the generic i th path between groups that are randomly assembled from the data, without regard to a-priori distinctions); the p -value is therefore obtained as follows:

$$p\text{-value} = \frac{1}{N_{\text{perm}} + 1} \sum_{k=1}^{N_{\text{perm}}} I\{\Delta_{i, \text{obs}(j)} < \Delta_{i, \text{perm}(k)}\}$$

where $I\{\cdot\}$ is the indicator function and N_{perm} is the total number of permutations³. Because the decision rule $\alpha=0.05$ was fixed, the null hypothesis (the individual characteristic V_j does not moderate the relationship γ_i) should be rejected if $p\text{-value} < 0.05$. A detailed description of the procedure for a permutation test based on random assignment can be found in Edgington (1987) and Good (2000)⁴.

5 RESULTS

In PLS Path Modeling, there is no overall fit index; nevertheless, a global criterion of goodness of fit has been proposed by Tenenhaus *et al.* (2004): the goodness of fit index (GoF). Such an index has been developed to take into account model performance in terms of both the measurement and the structural model and thus provide a single measure for the overall performance of the model.

The conceptual model previously described was estimated, and the GoF measure was found to be equal to 0.528, which exceeds the cut-off value of 0.36, meaning a large effect size for GoF as proposed by Wetzels, Schroeder, and Oppen (2009)⁵. Thus, the findings obtained adequately validated the PLS model globally. Moreover, Figure 3 provides the estimates of the hypothesized main effects of the conceptual model. These estimates include the results of both the measurement and the structural model; therefore, the factor loadings, path coefficients, and the R^2 , as well as the GoF, are displayed in the graph.

Figure 3 – Estimates of hypothesized main effects on longevity annuity purchase intention

5.1 Assessment of the Measurement Model

As shown in Table 3, a high level of each of the construct's internal consistency reliability was found because all of the Cronbach's alpha (Guilford, 1954; Chin, 1998) coefficients exceeded the 0.7 cut-off recommended by Nunnally and Bernstein (1994). Moreover, all average variances

³ For example, as far as gender is concerned, males and females were compared (a priori formed groups). The empirical analysis is based on 1,500 permutations.

⁴ The choice of using such an approach is also related to the different group sizes compared. Moreover, even for large samples, the permutation test is usually as powerful as the most powerful parametric test and may be more powerful when the test statistic does not follow the assumed distribution (Noreen, 1989, pp. 32–41).

⁵ This criterion was derived from the effect sizes for R^2 (an effect size of 0.02 is small, 0.15 is medium, and 0.35 is large) proposed by Cohen (1988).

extracted (AVEs) exceeded 0.5, meaning that on average, at least 50% of measurement variance was captured by the constructs (Fornell and Larcker, 1981). Thus, the convergent validity was also confirmed. Furthermore, the square root of the AVEs and the intercorrelations of the construct with the other constructs in the model are reported. All items loaded highly on their corresponding factors and loaded to a low extent on the other factors, therefore also confirming the discriminant validity.

Finally, as shown in Figure 3, all items involved in each construct were accepted because their factor loadings were greater than 0.7, satisfying the criterion of internal reliability (Fornell *et al.*, 1996; Johnson *et al.*, 2001).

Table 3 – Reliability analysis and convergent and discriminant validity

5.2 Assessment of the structural model

The overall evaluation of the structural model was based on the explained variance in the endogenous variables (R^2) and the path coefficients (see Figure 3). The model showed good predictability, accounting for an explained variance (R^2) of the dependent variables ranging from 0.33 to 0.47. Table 4 displays the results of hypotheses testing and the Q^2 test. The predictive measure for the endogenous constructs achieved values greater than 0 (ranging from 0.29 to 0.50), demonstrating that the model had predictive relevance (Esposito Vinzi *et al.*, 2010). Findings indicated that the model could adequately predict the intention of young adults to purchase a longevity annuity policy⁶.

Table 4 – Path coefficients and hypothesis testing

Table 5 – The indirect and total effects of the estimated model

Furthermore, in Table 5, the indirect effects corresponding to the indirect paths between latent variables and the total effects (i.e., the sum of the direct and the indirect effects) are reported.

In relation to the attitudinal construct of the model, hypotheses H1 and H5 were tested. The R^2 for attitude (ATT) is 0.385, which indicates that approximately 39% of the variation in ATT can be explained by behavioral beliefs (BB) and the subjective norm (SN). The contribution to the R^2 of BB was found to be equal to 51%, whereas the contribution to the R^2 of SN is equal to 49%. The testing of H1 showed that, as hypothesized, the direct effect between BB and ATT was significant (path coefficient = 0.376, p -value < 0.001). Therefore, hypothesis H1 was supported, implying that behavioral beliefs toward buying a longevity annuity policy did influence attitudes toward the purchasing behavior. In addition, behavioral beliefs significantly affected behavioral intention through attitude (its indirect effect is equal to 0.123). Thus, it can be concluded that attitude has a significant mediating role in the relationships between behavioral beliefs and intention. Hypothesis H5 showed that the direct effect between SN and ATT was positive (path 0.367) and significant (p -value < 0.001); therefore, such a hypothesis was also supported. In addition, through attitudes, there was an indirect positive effect (equal to 0.120) of the subjective norm on longevity annuity purchase intention.

Hypothesis H2 was tested to investigate the causal relationship between normative beliefs (NB) and the subjective norm (SN). The results showed that there was a positive (path coefficient of 0.573)

⁶The impact of subjective norm on attitude was also tested against the restricted model, for which this relationship was constrained to zero. Consistent with what was predicted, the results suggested that excluding this path from the model leads to a significant (small-to-medium) reduction in R^2 (Mathieson, Peacock, and Chin, 2001). Indeed, a small-medium effect size was found (0.182).

and significant (p -value < 0.001) direct effect accounting for 33% of the variance ($R^2 = 0.329$). Thus, hypothesis H2 was supported, meaning that normative beliefs did impact perceived social pressure. With regard to this relationship, factor loadings indicated that among salient referents, parents (0.927) played a slightly more important role than friends (0.913) in influencing the subjective norm. In addition, NB significantly affected intentions to behave through SN (its indirect effect is equal to 0.328). Thus, it can be concluded that the subjective norm has a significant mediating role in the relationships between normative beliefs and behavioral intention.

Finally, the findings revealed there were positive and significant (p -value < 0.001) effects of attitude (path coefficient of 0.328) and subjective norm (path coefficient of 0.452) on purchase intention. The R^2 for BI is equal to 0.485, which suggests that approximately 49% of the variation in BI can be explained by its predictors (i.e., ATT and SN). The contribution to R^2 was found to be equal to 60% and 40%, respectively. Thus, hypotheses H3 and H4 were supported. The support found for these hypotheses implied that the intention of young adults to buy a longevity annuity was positively associated with their evaluation of the outcomes that may derive from policy purchase and perceived social pressure from salient referents. Additionally, the estimates of the path coefficients showed that the direct effect of subjective norm on longevity annuity purchase intention was greater than that of attitude.

5.3 Empirical testing of the moderating effect on background factors

The results of the multi-group analysis are displayed in Table 6. The moderating effect of gender was tested by comparing the path coefficients of the male and female groups in each of the five causal relationships. The findings showed that gender significantly moderated only two out of the five relationships: the relationship between behavioral beliefs and attitude and the relationship between subjective norm and attitude. Compared to those of women, men's attitudes toward buying a longevity annuity was more strongly influenced by their evaluation about the outcomes of the purchasing behavior and their perceived social pressure. The effect of income as a moderating variable was tested by comparing the path coefficients of two groups of young adults classified as "high annual household income" (equal to or greater than €45,000.00) and "low-medium annual household income" (less than €45,000.00). We found that annual household income had a significant moderating effect on the relationship between behavioral beliefs and attitude, normative beliefs and the subjective norm, as well as between the subjective norm and attitude.

Attitude toward buying a longevity annuity policy of young adults with a lower annual household income was more strongly affected by both behavioral beliefs and the subjective norm. Furthermore, the subjective norm was also found to be more strongly influenced by normative beliefs. In other words, the attitude toward purchasing a longevity annuity of young people with a higher household income was less strongly affected by their evaluation of the possible consequences resulting from longevity annuity purchase and from their perception of salient referents' opinions. Furthermore, their beliefs about important thoughts by others exerted a weaker influence on their overall perceived social pressure.

Then, the effect of education as a moderating variable was tested by comparing the path coefficients of two groups: "high educational level", including individuals who had attained a college degree or a higher educational qualification, and "low-medium educational level", constituted by those who possessed a high school diploma or a lower qualification. The findings revealed that the educational attainment had a significant impact on the relationship between attitude and behavioral intention and the subjective norm and behavioral intention.

Specifically, intention to buy a longevity annuity on the part of young adults who had attained a lower educational level was observed to be more strongly affected both by their attitude toward the purchasing behavior and by their subjective norm.

Finally, the moderating effect exerted by place of residence was not supported by the findings, given that the corresponding variable did not interact significantly with any component of the model. Related results were therefore omitted in Table 6.

Table 6 – Results of multi-group analysis

6 DISCUSSION, POLICY, AND MANAGERIAL IMPLICATIONS

The present study analyzed the factors influencing the longevity annuity buying intention of Italian young adults by adopting the framework of the theory of reasoned action. Support was found for a central tenet of the TRA: that behavioral beliefs regarding longevity annuity purchasing behavior were positively related to attitude toward purchasing behavior and normative beliefs were positively related to the subjective norm. Moreover, conflicting with the assumption of the TRA positing the conceptual independence of the attitudinal and normative components (Ajzen and Fishbein, 1972), a positive relationship between the subjective norm and attitude was found. Finally, the moderating effect on longevity annuity purchasing intention with respect to three background factors (gender, annual household income, and educational attainment) was ascertained.

The value of this contribution resides primarily in enlarging the field of application of the theory of reasoned action and confirming its predictive validity, also within the financial context of longevity annuity buying intention. Thus, the results provide a theoretical basis for the study of this type of behavior. Second, although almost all previous studies, mainly of a financial type, have focused on elderly annuity purchasing behavior, the current research concentrates on young adults, who are the most penalized by the recent pension system reforms taking place all over the world, representing an important object of investigation. Furthermore, from a methodological perspective, this study illustrates how PLS Path Modeling (Wold, 1982, 1985) can be a suitable method for analyzing data collected according to the TRA framework, instead of the more widely used SEM – LM methodology, especially when data are not assumed to be normally distributed.

The outcomes of the current analysis reveal that the attitudinal and normative components of the TRA are not independent as predicted, given that a causal path from subjective norm to attitude was found. Consistent with previous studies (Ryan, 1982), this result implies that the formation of positive or negative attitudes toward buying longevity annuities is affected by how one's salient referents perceive the annuitization behavior. Thus, the influence of individuals' important referents on attitude should be included in future research designs.

In contrast to previous studies (see Ajzen, 1991), in which attitudes toward different behaviors have been found to make a significant contribution to the prediction of intention to behave, whereas the subjective norm has been somehow ambiguously related to the same intention, in this study, the impact of social pressure was found to overshadow personal considerations. Just as in prior research on young adults (Mandrik, Fern, and Bao, 2005), this research reveals the relevant impact that the social context has on younger people's intention to behave. In particular, the normative influence of close family members, parents in this case, has been found to be greater than that exerted by more socially distant individuals such as friends. According to what was suggested by Bansal and Taylor (2002), the importance of normative influence, and its interaction with attitude, could also depend on the fact that a longevity annuity is a service and is therefore difficult to evaluate. In service settings, individuals may be more likely to perform a certain behavior when both the subjective norm and attitude are positive. The authors acknowledge that responses could have also been biased by "desirable responding" (Stöber, 2001). The phenomenon is recognized as the tendency for people to present a favorable image of themselves on questionnaires (Paulhus, 1991) because they are somehow in need of social approval. This phenomenon occurs when sensitive questions (such as dietary intake, voting, and sexual behavior) are asked and answers could be unpleasant for many respondents (Tourangeau and Yan, 2007). In the present study, such a phenomenon could have been favored by the interviewers being somehow related to the interviewees.

In line with previous research (Gardner and Wadsworth, 2004), the analysis reveals the importance that three socio-demographic characteristics of individuals (gender, income, and educational attainment) have in influencing longevity annuity purchase intention. In particular, the intention to

perform the buying behavior on the part of less educated individuals appears to be more heavily influenced by their attitude and their perceived social pressure. Male attitudes were found to be more heavily affected by their behavioral beliefs toward longevity annuity purchasing behavior, as well as by the subjective norm. Analogous results were found for young adults characterized by a lower household income, who were also more greatly influenced by their normative beliefs.

The results can provide useful information from both a policy and managerial point of view.

From a policy point of view, in Italy, the public measures aimed at increasing the enrollment in integrative pension systems have been focused on financial incentives (mostly in the form of fiscal deductions) that could be gained by subscribers (Assoprevidenza, 2011). These interventions have largely disregarded the socio-demographic characteristics of the possible annuitants and the motives leading their choices. Only in recent years have training initiatives been undertaken throughout the Italian education system (elementary, junior high, and high schools, as well as universities) with the aim of increasing the financial literacy of young people before their entrance in the labor market. Educational initiatives have also been carried out among entrepreneurs and teachers. Only 29.5% of such programs have been directed toward families (Farsagli and Tracò, 2011). According to the results of the present study, however, interventions that involve individually younger people could be less effective than those also engaging their family members. Therefore, to increase the enrollment rate in private pension plans among young people, interventions targeting their whole family should be intensified, especially among lower-income households. Furthermore, although undoubtedly useful, these interventions should not only be aimed at increasing people's financial capability but should also be directed to improve their attitudes toward integrative pension products. This aim could be achieved by combining persuasive communication strategies with those that are solely informative, exploiting multiple media outlets, those of a social type included. Given the relationship between attitudes and beliefs, interventions should also be aimed at forming more favorable beliefs toward annuity products. An effective approach, based on the operant conditioning theory (Skinner, 1948), could consist in identifying and communicating the unfavorable consequences that may derive from not purchasing the annuity. Labeled *punishers* in the theory, these types of reinforcements decrease the likelihood of a behavior being repeated (in this case not to buy the annuity). In other words, similarly to the campaigns carried out in the field of disease prevention and health care, the content of messages could profitably leverage the negative outcomes that may result from *not annuitizing*. Whereas in the past, the consequences of not benefiting by an integrative pension were softened by a richer and "more generous" public-sector social security system, today, with the consolidation of a defined contribution method, the risks of outliving one's savings are concrete and potentially very harmful. The evidence of such risks could therefore constitute a convincing argument to spur more virtuous and provident behaviors. Moreover, such an approach was very effectively used in the twentieth century by the INA (Istituto Nazionale delle Assicurazioni, the public authority dominating the Italian market for life insurances at the time), which promoted family, work, savings, social insurance, and other protection coverage through widespread advertising campaigns precisely based on this type of behavior conditioning (Pratesi and Nosi, 2012).

From a managerial point of view, these results suggest the implementation of differentiated marketing strategies based on socio-demographic segmentation approaches. Given the generalized higher impact that social pressure has in affecting longevity annuity purchasing intention, to increase the individual level of private annuitization, people and environments perceived important by young adults should be approached. This holds true especially for males, those with a lower household income and lower educational attainment, who seem to be more sensitive to normative influence. Furthermore, given that men and individuals with lower household income appear to be particularly affected by their behavioral beliefs, framing techniques emphasizing the positive outcomes of buying a longevity annuity could be effectively used in sale strategies. In this manner, individuals would tend to form a more favorable attitude toward the behavior that would eventually positively reverberate in purchasing intentions.

From a communication point of view, findings suggest that marketers should carefully consider the factors contributing to the formation of positive attitudes and influencing perceived social pressure by target individuals in working out their strategies. At least in Italy, the communication mix of insurance companies (Pratesi and Nosi, 2012) and, in general, of financial companies operating in the longevity annuity market, is composed of predominantly one-to-one activities conveyed by sales agents. Complex financial products, in fact, require a process of “customer education” that is difficult to realize through non-personal media. The role of the salesperson usually consists in identifying the prospect (often picking names from a list provided by the company), arranging an appointment, and starting a more or less lengthy series of meetings to finalize the negotiation (Pratesi, 1990). The present research results suggest that this approach may not be the most effective. Given that normative influence has been found to be the most important factor affecting longevity annuity purchasing intention, communication of a social type based on personal networks, could lead to better results. Communicating in social media and interacting with communities (of professionals included) could determine a “halo effect”, which, in the medium-long term, could provide better outcomes compared to the traditional one-to-one form.

There are two main reasons why, to date, a many-to-many communication form has been adopted only occasionally, and in an unstructured way, in the Italian annuity market: first, because the organizational structures of Italian companies operating in this business do not yet provide a digital/social communication department in charge of managing this process. The lack of such a department is partly because it is difficult to set up such an office, which necessarily has to interact and coordinate with different units: sales, corporate communication, marketing, customer care, and the network of agencies that need to be independent in their communication activities (especially in online communication). Second, because establishing a strong online presence through the use of social media carries with it risks of a reputational type. Insurance and financial companies are often the subject of criticism on the part of customers. A complaint, if limited to the one-to-one relationship with a customer care office or with an agent, has a low chance of significantly affecting the corporate image. In contrast, if the same complaint is shared in the network, its effect would definitely be amplified. In conclusion, although it is important to develop communication strategies exploiting the opportunities that social media offer, it is also necessary to train employees so that they succeed in taking advantage of these tools while limiting the possible related risks.

7 LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

The first limitation of this study is related to the design of the survey based on a convenience sampling method. Although future research on longevity annuity purchasing behavior would definitely benefit from investigations of probability samples, it cannot be ignored that the use of non-probability samples is quite common in marketing research, as well as in behavioral and social science studies. Therefore, it is extremely important that findings obtained from convenience samples be critically evaluated even if the precision of estimation in this study can benefit from the wide sample size used. Furthermore, it can be argued that the only way to actually assess potential biases due to non-probability approaches consists in comparing the results from those obtained for the whole target population, and for this reason, we attempted to control the possible biases by using a post-stratification methodology. Findings from this study have to be generalized with caution even if they may be used to develop further and important research questions later to be investigated in a more structured sample survey.

This study is primarily useful for documenting the applicability of the TRA conceptual model to the defined group of Italian young adults and demonstrating the specific socio-economic characteristics that have a moderating role in the TRA framework.

As in many other previous studies, this study also investigated the intention to buy a longevity annuity and not the actual act of purchase. Although there is compelling evidence related to many different types of behaviors regarding the validity of intention in predicting real action (see Ajzen, 1991), no test of the relationship between intention and actual purchasing behavior was performed

in this research. Future studies could profitably investigate the relationship between intention and real behavior.

Moreover, given that a significant influence of the normative component on behavioral intention was found in this study, further research could profitably investigate the impact that other reference groups, such as siblings, relatives, co-workers or classmates, or romantic partners, in addition to parents and friends, may exert on the longevity annuity buying intention of young adults.

These studies should also include some measures to prevent the so-called “response bias”. Given the social sensitivity of the matter investigated in the present study, researchers should take precautions in minimizing the phenomenon of “socially acceptable answers” that could distort the research results.

Because a significant effect of socio-demographic characteristics in moderating purchase intention was revealed, research should further investigate the influence that background factors may exert on the fundamental constructs of the TRA with the aim of increasing the predictive validity of the model.

Finally, the research was limited to Italy. Country-related social and cultural factors undoubtedly influenced the findings. Future investigations enlarging the geographical scope of the analysis could obtain different results that may be worthy of attention in drawing research, policy, as well as managerial implications.

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Table 1

Socio-demographic characteristics of the sample and population.

	Variables	Sample (%)	Population (%)*
Gender	Male	52.71	50.41
	Female	47.29	49.59
Education	Primary	5.71	30.74
	Secondary	46.58	42.68
	Tertiary	47.71	26.58
Age	25	24.43	7.37
	26	14.57	7.49
	27	11.60	8.17
	28	9.59	9.27
	29	7.34	7.76
	30	7.85	9.18
	31	5.17	9.76
	32	5.01	9.26
	33	4.34	10.79
	34	4.08	10.14
	35	6.02	10.80
Place of residence	North	30.16	44.34
	Centre	39.53	19.27
	South and Islands	30.31	36.39

*Population % based on the Italian section of the EU-SILC survey (2009).

Table 2

Items and theoretical constructs.

Item	Construct
If I purchase a longevity annuity within the next two years, I will live comfortably during old age. (A1)	Behavioral Beliefs (BB)
If I purchase a longevity annuity within the next two years, I will save money regularly. (A2)	
If I purchase a longevity annuity within the next two years, I will make a profitable investment. (A3)	
If I purchase a longevity annuity within the next two years, I will ensure the future of my heirs. (A4)	
My parents think that I should purchase a longevity annuity within the next two years. (C1)	Normative Beliefs (NB)
My friends think that I should purchase a longevity annuity within the next two years. (C2)	
Purchasing a longevity annuity in the next two years is harmful/beneficial. (G1)	Attitude (ATT)
Purchasing a longevity annuity in the next two years is foolish/wise. (G2)	
Purchasing a longevity annuity in the next two years is unnecessary/essential. (G3)	
Purchasing a longevity annuity in the next two years is difficult/easy. (G4)	
Most of the people I care about think I should purchase a longevity annuity. (H1)	Subjective Norm(SN)
Most of the people who influence my decisions think I should purchase a longevity annuity. (H2)	
I intend to buy a longevity annuity in the next two years. (I1)	Behavioral Intention(BI)
I will make an effort to buy a longevity annuity in the next two years. (I2)	
I want to buy a longevity annuity in the next two years. (I3)	

Table 3

Reliability analysis and convergent and discriminant validity

Latent construct	BB	NB	SN	ATT	BI	AVE	Cronbach's alpha
Behavioral Beliefs (BB)	0.789					0.623	0.78
Normative Beliefs (NB)	0.187	0.919				0.845	0.81
Subjective Norm (SN)	0.157	0.329	0.939			0.881	0.89
Attitude (ATT)	0.272	0.228	0.266	0.804		0.646	0.81
Behavioral Intention (BI)	0.202	0.261	0.386	0.315	0.839	0.704	0.79

Note: Diagonals represent the square root of the average variance extracted while the other entries represent the correlations.

Table 4

Path coefficients and hypothesis testing

Hypotheses	From	To	Path coefficients	t-Value	Status	Redundancy Q^2
H1	BB	ATT	0.376	38.015	Supported	
H2	NB	SN	0.573	60.503	Supported	
H3	ATT	BI	0.328	33.226	Supported	0.50
H4	SN	BI	0.452	45.729	Supported	0.33
H5	SN	ATT	0.367	37.136	Supported	0.29

Table 5

The indirect and total effects of the estimated model

Endogenous Variables	Relationships	Indirect Effects	Total Effects
Attitude (ATT)	BB → ATT	-	0.376
	SN → ATT	-	0.367
	NB → ATT	0.210	0.210
Behavioral Intention (BI)	NB → BI	0.328	0.328
	BB → BI	0.123	0.123
	SN → BI	0.120	0.572

Table 6

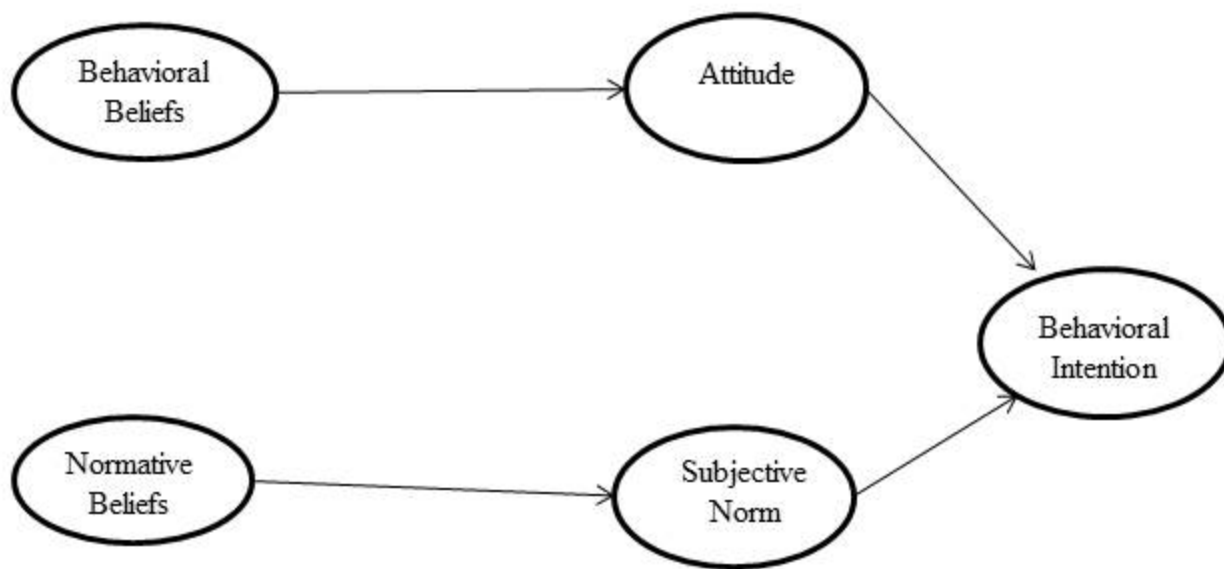
Results of multi-group analysis

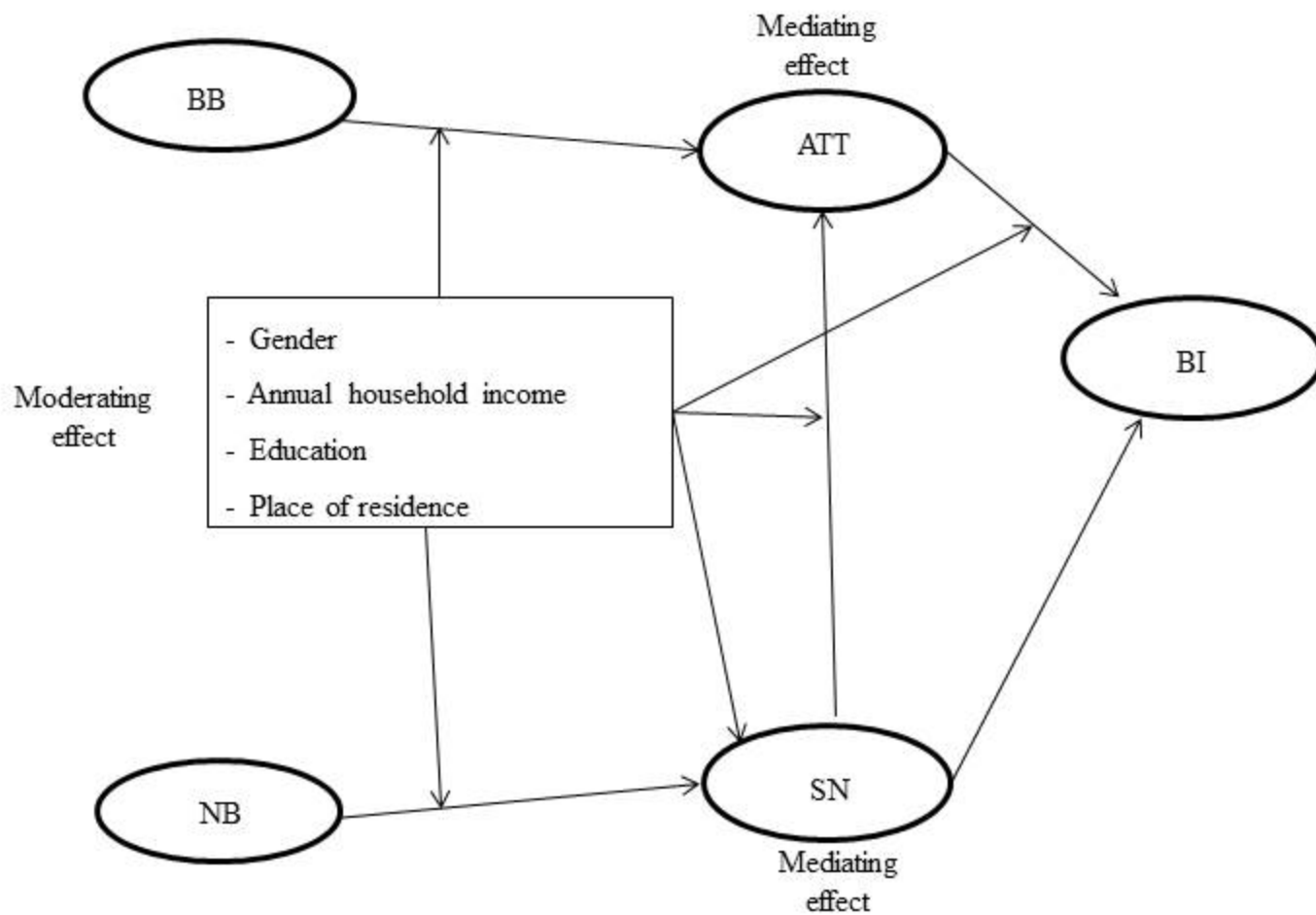
Paths (γ_i)	Variables (V_j)		
	GENDER	INCOME	EDUCATION
	Men vs. Women	Low/Medium vs. High	Low/Medium vs. High
BB $\rightarrow$ ATT	0.106 (0.020)*	0,171 (0,006)*	0,038 (0,287)
NB $\rightarrow$ SN	0.034 (0.257)	0,157 (0,004)*	0,038 (0,257)
ATT $\rightarrow$ BI	0.004 (0.950)	0,064 (0,234)	0,071 (0,050)*
SN $\rightarrow$ BI	0.023 (0.515)	0,037 (0,481)	0,073 (0,030)*
SN $\rightarrow$ ATT	0.087 (0.020)*	0,159 (0,022)*	0,044 (0,238)

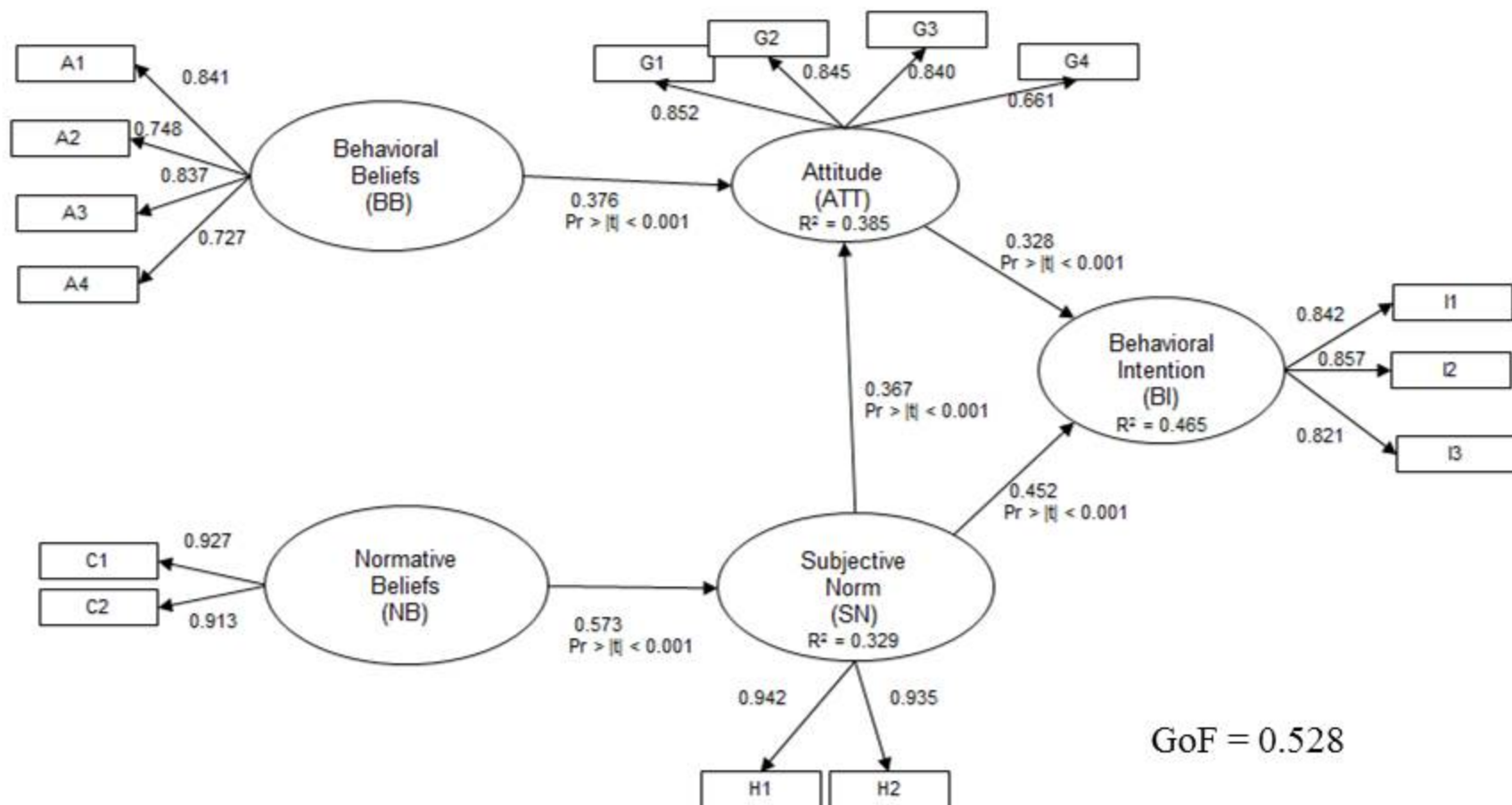
Note: Paths coefficient differences and bootstrap p-values in parentheses, *significant differences.

Highlights

- We investigate longevity annuity buying intention of Italian young adults
- We adopt the Theory of Reasoned Action for analyzing annuity purchase intention
- Attitudes and subjective norms influence longevity annuity purchase intention
- Social pressure exerts a greater influence than overall attitude on buying intention
- Purchase intention is moderated by gender, household income, and education







Title: Saving for Old Age: Longevity Annuity Buying Intention of Italian Young Adults

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