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by Stefano Cosma and Francesco Pattarin

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CEFIN - Centro Studi di Banca e Finanza
Dipartimento di Economia Aziendale - Università di Modena e Reggio Emilia
Viale Jacopo Berengario 51, 41100 MODENA (Italy)
tel. 39-059.2056711 (Centralino) fax 059 205 6927

Attitudes, personality factors and household debt decisions:

A study of consumer credit*

Stefano Cosma
CEFIN Centro Studi di Banca e Finanza - University of Modena and Reggio Emilia

Francesco Pattarin
CEFIN Centro Studi di Banca e Finanza - *University of Modena and Reggio Emilia*

Abstract:

A fairly extensive literature from the field of empirical psychology has provided evidence that personality factors and attitudes toward credit may influence individuals' debt financing decisions. This paper investigates the importance of these factors by analysing the results of an original survey about the recourse to consumer credit, conducted on a wide sample of Italian households. Three main research questions are addressed. Is there any relationship between personality, attitude and recourse to consumer credit? Are there any differences in psychological profiles of credit users and non-users that can be associated with the motivations for using consumer credit? Does the psychological profile affect the preferred way of financing consumption? According to our analyses, the influence of psychological factors on consumer credit decisions cannot be rejected. Attitudes toward debt appear to play an important role and are significantly related to motivations for using credit and to the preferred form of financing. Personality factors do not emerge as having a clearcut effect on the decision to taking on debt. While this is in line with some previous research findings, when personality's features make a difference this is in the opposite direction of what is commonly found, as more fatalistic individuals are less likely to use consumer credit.

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1 Introduction

Since the early 1990s up to the triggering of the financial crisis in 2007, households' debt has considerably grown up in numerous countries. This phenomenon concerns not only real estate mortgages, but also consumption loans. Additionally to the most well known cases like the United States and Great Britain, various economies of both continental Europe and Eurasia have doubled or tripled the ratio of households' debt to GDP, especially from 2000 on (BIS 2009; Rinaldi, Sanchis-Arellano 2006; ECB, 2009).

In reference to the Italian market, over the last decade families have increased their propensity towards debt and, as a consequence, their financial liabilities (Banca d'Italia, 2010) with respect to their equity as well as in absolute terms[1]. Moreover, there has been a substantial modification in the structure of family balances, both on the assets and the liabilities side. Not only Italians save less with respect to 1990s but they have also changed the composition of their wealth towards less liquid financial instruments and real estate investments (Banca d'Italia, 2009).

The economic literature has mainly explained families' debt choices through socio-economic and demographical variables. More specifically, attention has been concentrated on the households' disposable income and economic characteristics. However, this approach has not led to unambiguous conclusions on the role of consumption credit in the management of family balances, also due to the confounding effects of banks' and other intermediaries credit policies. Indeed empirical evidence is often at odds with the classical models of permanent income and life cycle consumption behaviour, and several studies have shown the explanatory relevance of liquidity constraints and and household-specific socio-economic characteristics (Jappelli and Pagano 1989; Magri, 2007; Guiso et al., 1994). On the other hand, a fairly extensive literature from the field of empirical psychology, a review of which is provided

[1] At the end of 2009 the ratio of household debt to the annual disposable income was equal to about 60 per cent compared to 33 per cent in 2001. In the same period, the incidence of the debt service (comprehensive of both capital and interest payments) on the annual disposable income was equal to about 9 per cent versus 6 per cent in 2001. (Banca d'Italia, 2010)

here, has found evidence that personality factors and attitudes toward credit may influence individuals' debt financing decisions beyond economic rationality.

This paper investigates the importance of psychological characteristics in credit-related choices by analysing the results of an original survey conducted on a wide sample of Italian households. The main goal is to test whether the psychological profile of household's decision maker might determine consumer credit use, focusing on attitudes and the ‘locus of control’ – that is, the subjective perception of one's own ability to control life events and their outcomes. The study improves on most existing research on these topics because of the larger than usual sample size and scope, and also since several studies from the psychological field are lacking in the assessment of household economic conditions and expectations.

According to the analyses that have been performed, the influence of psychological factors on consumer credit decisions cannot be rejected. Attitudes toward debt appear to play an important role and are significantly related to motivations for using credit and to the preferred form of financing. Some evidence on the effect of personality's features suggests that more fatalistic individuals are less likely to use consumer credit, which contradicts many previous studies that have concluded for the opposite.

The relationship between the motivations and contractual forms of credit use and the psychological profile has also been delved into. An original contribution in this direction is the isolation of *credit* attitudes' influence from *money* attitude's on the use of revolving credit cards, which the existing literature has not achieved yet (Hayhoe, Leach and Turner, 1999).

The rest of the paper is organized into four sections. Section n.2 is a review of the literature on the psychological aspects and determinants of consumer credit. Section n.3 is a description of the sample and methodology that have been used to build the research's data set. The statistical analyses and results are presented in Section n.4; Section n.5 concludes.

2 Financial and psychological drivers of consumer credit

For an exhaustive explanation of the widespread growth of household debt both in size and scope over the last decade, a comprehensive analysis is useful of manifold phenomena regarding both the consumption credit demand and supply side. Given the confounding effects of the credit policies enacted by financial intermediaries on the analysis of households debt decisions,[2] all the more complex is explaining the increase of credit and microeconomic behaviours on the demand side through demographic, economic and financial factors only. Also contributing to the increased propensity to credit, typical of the last twenty years has been indeed the spread of a more favourable attitude towards debt, in particular for financing one's own consumption needs (Merskin, 1998; Watkins, 2000). This attitude has spread on individual as well as cultural level, thus modifying some social models of economic behaviour, previously mainly turned toward saving (Godwin, 1997).

For an explanation of the families' behaviours with respect to debt, a clarification on the nature of the debt itself is an allotted priority. To this point, there is a distinction in the literature between consumer *credit* and consumer *debt*. Notwithstanding the usually ambiguous definition, by 'consumer credit' reference is made to the institutional recourse to credit, presupposing the credit request by a household that the banker considers solvent and the subsequent decision of lending. The expression 'consumer debt' refers instead to those debts arisen when the creditor does not fulfil the assumed obligations, thus without his or the creditor's will[3].

Some authors do not consider this distinction necessary, as they identify in the concept of consumer debt either the possible end of a credit relationship, or the result of a frequently transitory difficult situation, which is consequent to a non-premeditated behaviour (Kamleitner and Kirchler, 2008). Consumer debt is frequently associated to poverty and economic or financial weakness, thus being a forced status, related to the household's situation and needs (Lea, Webley and Levine, 1993) together with lack of sufficient income or adequate backup from liquid assets.

In the range of consumer credit, instead, less completely is the recourse to credit explained by income variables. From some empirical analyses a positive relation emerges between income and credit use (Crook, 2001; Cosma, 2006; Fabbri and Padula, 2004), whereas other contributions highlight a negative relation between current income and recourse to credit but a strong influence of permanent income (Magri, 2002; Cox and Jappelli, 1993; Jappelli and Pagano 1989; Magri, 2007; Guiso et al., 1994). Lastly, if considering the

[2] The explanation of the evolution of household's debt is interestingly further completed by the analyses of the supply side in terms of number, variety of products, distributional channels (Casolaro, 2007; Holmes, Isham, Petersen and Sommers, 2005), typology of intermediaries (Cosma, 2009b), credit processes and policies (Barone, Felici and Pagnini, 2006; Casolaro, Gambacorta and Guiso, 2006; Kidane and Mukherji, 2004; Cosma e Filotto, 2003), credit availability (Soman and Cheema, 2002) or constraints (Cox and Jappelli, 1993).

[3] Livingstone and Lunt (1992); Berthoud and Kempson (1992); Ford (1988); Lea, Webley and Levine (1993); Lea, Webley and Walker (1995).

average disposable income per component[4], recourse to credit turns out to be much concentrated around medium-to-low values (Cosma, 2009a).

Psycho-behavioural factors

According to some studies, credit demand also derives from behaviours that deviate from economic rationality (Bertaut and Haliassos; 2006); often, recourse to credit is influenced by personal and psychological factors beyond utility maximization (Bertrand, 2005). In this sense, the understanding of households' economic behaviour can benefit from an integrated analysis also accounting for psychological, individual and interpersonal factors (Ruminati and Mistri, 1998)[5].

Research and empirical evidence aimed at explaining the recourse to credit by households abound within the psychological literature, delving into numerous aspects of the action as well as the decisional processes related to debt choices and credit purchases. A relevant role turns out to be performed by differences in personality, motivation, abilities and personal preferences. Also to be considered are the complex interactions between contextual and individual factors (Kirchler and Zappalà, 1995).

In the light of these considerations, a review of the literature can be organized into two main strands: the one focusing on the relation between the individual and the social environment in which financial decisions are made, the other specifically dedicated to studying the personal characteristics of the credit user.

Interpersonal factors

The first strand is dedicated to studying the role and effects of family-environment interaction and of the unconscious conditionings that each individual experiences just for belonging to or acting in a given context. Such aspects are defined as 'interpersonal factors', meant as interactions between general contextual factors (such as reference group, dominant culture, behavioural patterns, ethic and aesthetic values, modes of communication) and subjective factors (such as personal needs, aspirations, motivations, cultural level) that bear on behavioural models through perceptions as well as emulation or differentiation processes.

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[4] The average disposable income per component is equal to the current income divided by the number of household components.

[5] Psychological disciplines have already been well exhaustive in explaining economic and financial behaviours, such as purchasing or investment decisions (Shefrin,1999; Shiller, 2000).

These elements contribute to modify families' behaviours, sharpening the comparative evaluation of their own situations; where the materialistic connotation of social classes is strong, a stronger propensity and more favourable attitudes are observed with respect to credit. (Watson, 2003; Walker, 1996). In this respect, a positive relation has been pointed out between recourse to credit and the distance perceived, for instance in income terms, between a family's situation and its social group of reference (Karlsson et al., 2004). In explaining their own debt situation, families tend to compare themselves with a reference group characterized by similar economic and financial situations, thus showing consistency between their perception of belonging and their effective condition (Lunt and Livingstone, 1991). A certain consistency in social comparison has been pointed out by Lea, Webley and Levine (1993) too, as families with debts, more easily than those without, affirm that the majority of their own relatives, acquaintances or friends consider to be normal the fact of having got into debts.

Moreover, the act of consumption is often a crucial factor in financial decisions because of the material and social meanings it has been attributed of. Often consumption and credit assume *together* a connotation of social identification for the family, thus satisfying the need for belonging with their peers (Livingstone and Lunt, 1991; Bernthal et al., 2005). Besides, through its consumption the family (or the individual) also defines its living standards and lifestyle, filling the gap it perceives in comparison with its real or ideal reference groups (Morgan and Christen, 2003). And yet, if on the one hand recourse to credit satisfies social identification needs, not to be neglected is on the other that being in debt may also involve a psychological cost and a substantial increase of stress levels (Brown, Taylor and Price, 2005).

Personal attitudes

The studies dedicated to credit user's characteristics generally concentrate on subjective and personal factors, on the meaning the individual attributes to credit and being in debt, on the relations amongst life events, credit behaviours and risk of over-indebtness. Individual factors specifically concern personality, motivations, purposes of action, abilities, preferences, perceptions, in particular those concerning the general economic or environmental as well as individual condition. Moreover, an important role is covered by 'attitudes', as subjective tendencies to do something, expressed through the favourable or unfavourable evaluation of a given object (Eagly and Chaiken, 1993).

In the case of consumer credit, on the one hand more or less favourable attitudes qualify a judgement weighing upon the cognitive and decisional process concerning recourse to credit itself, on the other identify a higher or lower tendency to use it. For our purposes it turns out to be useful, indeed, to further decompose the attitudes, to single out three significant components such as the cognitive, the affective and the behavioural component.

The cognitive component is constituted by the individual's whole information set, knowledge, beliefs, opinions, perceptions, thoughts regarding consumer credit, which she has matured during her life on the basis of her own experiences and interactions with the environment. The cognitive component is important because it contributes to determine the frame of reference in which behavioural decisions are made.

The affective (or 'emotional') component is constituted by emotions, sentiments and, especially, sensations aroused by consumer credit, that is. by the very condition or just the thought of being in debt. The affective component is relevant for seizing the effective meaning attributed to credit and the structure of preferences, which in the cognitive component could be distorted by external elements.

The behavioural component relates to all the explicit behaviours toward consumer credit and, in part, even the proactive intentions not yet transformed into explicit behaviours. Within credit use, such are the behaviours performed with respect to money management, family balance and recourse to consumer credit, differentiated by spending intentions.

The relation between attitudes and credit use has been object of several studies whose empirical evidences do not lead to homogeneous results. Such heterogeneity is mainly due to the specific orientation of many researches toward revolving consumer credit (via credit card), where attitudes toward credit overlap with those toward money. These latter considerably depend upon demographic and interpersonal factors, relating to the effects of the use of credit cards as payment instruments too, and as such, functional to affirm one's own social status or to overcome a sense of personal inadequacy (Furnham, 1984; Hanlhey and Wilhelm, 1992). Livingstone and Lunt (1992) have found a positive and relevant relation between the individual's favourable or unfavourable attitude toward credit, his level of indebtness and intention to repay. This relation has been identified also by Lea, Webley and Levine (1993) who, through the comparison amongst families having run into debts with a water-utility firm, have observed a pervasively negative attitude with respect to debt behaviours, but with significantly more intensity in families without debts. Zhu and Meeks (1994) instead cannot prove a significant relation between attitudes and credit but in presence of a high level of instruction. Davies and Lea (1995) analyse the opinions of students who had made use of loans to fund their own education and find a positive relation between favourable attitudes and debt. Differently from what has emerged in Lea, Webley, and Levine (1993), the students do manifest attitudes of tolerance with respect to consumer debt. Actually, some attention must be paid to the relation between behaviours and attitudes because the former may influence the latter; for instance, within *consumer debt*, opinions tend either to justify one's own status (Lea, Webley and Young, 1991) or to be significantly inconsistent (Ajzen, 1996).

Not even in *consumer credit* is the role of attitudes in interpreting financial decisions univocal, with particular reference to the consistency between attitudes and behaviours, given the high difficulty to understand whether attitudes or behaviours are firstly determined. It has been noticed indeed how the existence of previous experiences of consumer credit use, even when mediated by friends or relatives, increase the probability of credit use and induce a more favourable attitude toward it (Kaynak and Harcar, 2001).

The relation between attitudes and behaviours has been further elaborated even with reference to the typology of credit instruments. Given the assumption by which attitudes more often constitute a mediating factor of other characteristics, Chien and Devaney (2001) notice that a generic higher propensity to credit leads more likely to the use of instalment loan, whereas the existence of specific favourable attitudes is associated with a higher probability of credit card use[6]. The role of different components within attitudes has been specifically analysed by Xiao, Noring and Anderson (1995), who have studied students' attitude toward credit. Notwithstanding the bias due to referring to the use of revolving cards in measuring attitudes, the interviewees turn out to be on the whole favourable toward credit. And yet, significant differences emerge amongst affective, cognitive and behavioural components: a positive relation stands out between the intensity of the first two ones and the use of credit cards. The same result emerges in Hayhoe, Leach and Turner (1999), confirming both the existence of a positive relation between the affective component and the use of credit cards, together with the relevance of the cognitive component in influencing behaviours.

[6] The general attitude is measured through the analysis of the opinions on consumer credit, while the specific attitudes are measured through the analysis of the propensity to use credit in the purchasing discretionary rather than basic goods.

Personality Factors: Locus of Control

The effects of attitudes on credit use have to be valued also in light of the relevance of personality factors (Tokunaga,1993; Davies and Lea, 1995) as well as of other elements such as risk propensity and subjective frame of choice options (Kahneman and Tversky, 1979). Personality factors are characteristics specific to individuals, deriving from their own personal development path as well as family, social and educational background, which determine their interpretation of both the environment and their own reference reality and, as a consequence, influence individual action in all the domains of his existence. Personality factors are for example extroversion, sociability, conscientiousness, emotional stability, shyness, insecurity, and attributional style.

The attributional style ('locus of control') is related to the perception of one's own capacity of controlling the events of life. *Internal* locus of control identifies the perception of the capacity of controlling events, as is the belief that situations and results of personal events depend upon decisions and capacities of the individual. Vice-versa, *external* locus of control concerns the perception that one's own life's events depend upon external factors, often perceived as random and, however, not significantly dependent upon the individual's actions or will.

The individual with internal locus of control trusts her capacity of controlling her actions' result and life's events. She is, therefore, more attentive to any event able to give her information to orient her own decisions; she constantly tries to value her own capabilities and is above all worried by her own cognitive deficit. In general she turns out to be less subject to external conditionings (Rotter, 1966).

Several researches exist on the role of locus of control in credit behaviours, where not always it comes out to be significant. Dessart and Kuylen (1986) observe an external locus of control, in reference to individuals in debt with difficulty of repayment. The authors show that individuals with lower locus of control and financial difficulties manifest a lower interest in and own less knowledge of the characteristics and conditions of their debt. Livingstone and Lunt (1992) highlight the role of locus of control in the explanation of debt. Individuals with more debt have a higher external locus of control; Tokunaga (1993) study reaches similar conclusions. Any relevance of locus of control does not emerge in debt explanation according to Lea, Webley and Walker (1995) nor to Davies and Lea (1995), although these latter identify a relation between external locus and favourable attitude toward debt. Other studies have proved how locus of control and auto-perception influence, directly or indirectly, preferences, decisions and financial behaviours (Hira and Mugenda, 1999; Perry and Morris, 2005). More specifically, external locus mediates the effects of financial education on making the correct decisions, reduces the attention paid to the management of one's own balance, consistently with the results showing higher debt levels and more financial problems amongst individuals with external locus (Perry and Morris, 2005).

3 Research method

Description of the sample

The data set used in this research is the outcome of a dedicated survey involving 2000 Italian households and carried out from April to June 2009 by a market research firm. The sample comprises families that, when interviewed, had recently made recourse to consumption credit, as well as families that had not. Since consumption credit is not very frequent in Italy, credit users were oversampled in order to collect as much information as possible about the phenomenon, so to make up half of the whole sample[7]. Otherwise, the sample design is aimed at representing the composition of the population of Italian households by size and domicile.

A questionnaire of sixty closed-form questions devised by the authors was submitted by telephone interview (through the CATI system) to a single component of any household in the survey list declaring him as participating to the family financial and economic decisions. The questionnaire consists of three main sections respectively about: (1) demographic, professional and educational characteristics, (2) economic conditions and credit use, (3) psychological profile with regard to personality and attitudes toward credit.

To the purposes of this research, a 'credit user' is a family that was either using consumer credit when interviewed or had used it during the previous 24 months. 'Credit non-user' families are those that do not satisfy any of these conditions. The choice to limit the credit usage definition to two years in the past is meant to assure the reliability of the answers about motivations, behaviour and the credit-related decision making process.

In 144 cases out of 2000 the interviewee did not answer to all questions about his psychological profile. Therefore, only 1856 cases are effectively available for investigation;

[7] The Bank of Italy (2009) estimates that the share of Italian households using consumption credit was 13 per cent at the end of year 2008.

909 cases are credit users and the remaining 947 cases are non-users. The overall frequency of non-responses is mild (7.2 per cent) and it is higher for users (8.1 per cent) than for non-users (5.3 per cent); in neither of the two types preliminary data analyses have revealed any systematic difference between respondents and non-respondents by the characteristics of either the household or the interviewee.

Preliminary descriptive statistics of the effective sample have shown that almost 45 per cent of households live in Northern Italy. The share of credit users is 14 per cent higher than that of non-users in Southern Italy (including Sicily and Sardinia) and eight per cent less in the North West of the country. Almost 20 per cent of households have one or two members, 25 per cent have three and the rest (55 per cent) four or more. Larger households are more frequent among credit users than non-users, where three components families are most common. In over 90 per cent of cases, households have one or two income earners; the distribution by number of income-earning members is not remarkably different for credit users and non-users. The similarity between the two types of families holds also with respect to the gender of the respondents: 40 per cent are male and 60 per cent female. Most interviewees (67 per cent) are in the 35 to 64 years age range; the frequency among non-users is slightly higher than for the whole sample in the 18 to 34 range (15 per cent) and above age 65 (26 per cent). The level of education of respondents is mostly (80 per cent) between primary junior ('Licenza media') and secondary ('Diploma'); among credit non-users, college ('Laurea o superiore') and primary infant ('Licenza elementare o nessuno') levels are more frequent than among users. In 55 per cent of instances respondents were working when interviewed; the proportion is higher for credit users (60 per cent) than for non-users (50 per cent) that show a higher concentration of retirees (30 per cent compared to 21 per cent for credit users)[8].

Assessing and measuring attitudes and personality

Two sections of the questionnaire are aimed at assessing the psychological characteristics of the interviewee. The first section consists of twelve questions about attitudes toward credit; six questions about the locus of control comprise the second section. All questions elicit an expression of agreement about some given statement on a five-grades Likert scale, but the interviewee may avoid answering if she has not any opinion. The level of agreement is coded from 'strongly agree' to 'strongly disagree'.

[8] Descriptive statistics' tables are not shown for saving space, and are available from the authors upon request.

Table 1 Questionnaire items for assessing attitudes by component

Cognitive component
1. Taking out a loan is a good thing as it allows you to make your life better
2. It is a good idea to have something now and pay for it later
3. Having debt is never a good thing
4. Credit is an essential part of today's lifestyle
5. It is important to live within one's means
Emotional
6. I am not worried of having debt (this condition is not stressful for me)
7. I like having a credit card
8. I do not like borrowing money
Behavioural
9. I prefer to save for making an expensive buy
10. It is better to go into debt than to let children go without Christmas presents
11. Even on a low income, I save a little regularly
12. Borrowed money should be repaid as soon as possible

The assessment of attitudes toward credit follows the approach of Lea, Webley and Walker (1995). Five items relate to the cognitive attitude, three to the emotional and four to the behavioural one (Table n.1). A score from one to five is attributed to any answer; the higher the value, the more liking toward credit is expressed. The Lea, Webley and Walker approach has been preferred over alternatives, like Xiao and co-authors (1995) or its evolution by Hayohe, Leach and Turner (1999), since it avoids any reference to credit card use, which, to the purpose of this study, might introduce a confounding bias because it elicits answers that are also correlated with attitudes toward money.

The self-consistency of attitude evaluations over the various items has been checked for with Cronbach's Alpha (Cronbach, 1995). This indicator takes values from zero to one with the consistency of answers improving; an Alpha value of at least 0.4 is commonly considered as adequate. The Alpha for the cognitive, emotional and behavioural components' items are equal to, respectively, 0.539, 0.186 and 0.335. These values have been improved upon by purposefully selecting only certain items for each attitude component. The better representation of the cognitive attitude is thus achieved by keeping only items one, two and three, which deliver a Alpha a level equal to 0.593; for the emotional component items six and eight achieve Alpha = 0.227; finally, items nine, 11 and 12 have been selected for the behavioural component (Alpha = 0.385). Considering all selected items together (that is, regardless of the dimension they belong to) the overall Alpha level equals 0.534.

The selected items have been combined into four synthetic measures of attitude toward credit (referred to as ‘scale’): one for each of the three components and a further comprehensive measure of overall attitude. For each sample case and each measure a scale value is calculated by summing the scores on any relevant item and standardizing the result over the unit range, so that the closer the resulting value is to one the stronger the liking for credit.

Measuring the locus of control is considerably more difficult than attitudes. First attempts by Rotter (1966) required 23 questions, while Levenson (1973) used 24 in a clinical study. When samples have larger sizes than in traditional clinical studies, as is typical in survey researches, scales based on a lower number of items are called for. Craig, Franklin and Andrews (1984) tested a 17 items scale, while Lumpkin (1985) proposed a more parsimonious solution, based on six items only, which is suitable to large-scale studies. In Lumpkin's scale, three questions are framed toward external locus and three toward internal locus. For the large sample size and for the fact that interviews were carried out by telephone calls, in this research locus of control has been measured by Lumpkin's scale (Table n.2).

Table 2 Questionnaire items for assessing locus of control

Internal locus of control
1. When I make plans I am almost certain that I can make them work
2. What happens to me is my own doing
3. Doing things the right way depends upon ability; luck has nothing to do with it
External locus of control
4. Many of the unhappy things in people’s lives are partly due to bad luck
5. Getting a good job depends mainly on being in the right place at the right time
6. Many times I feel that I have little influence over the things that happen to me

The valuation method for the locus of control is similar to the method used for attitudes. According to Likert's five grades scale, the more external (or less internal) is the locus for any given item, the higher the attached score. Cronbach's Alpha equals 0.376 considering all six items; when items 4 and 6 are dropped, its value rises to 0.45. Therefore, the overall locus of control scale is defined as the standardized sum of the scores on items one, two, three, and five. Values on the scale closer to one correspond to more external locus.

4 Analyses and results

This section is about the results of the statistical analyses tha have been carried out on the collected sample data. The most important hypothesis that has been tested for is the presence of a relationship between consumer-credit use and psychological factors, notably the attitude toward credit and the locus of control of the interviewees. Two further aspects have been examined: whether those factors are can be associated to (a) motivations for using consumer credit and (b) to the families' preferred forms of credit. Finally, a logistic regression analysis has been performed to check if the influence of attitude and locus of control on credit decision persists when other potentially relevant household characteristics are also taken into account as concurrent (possibly competing) factors.

Attitudes, personality and recourse to credit

The presence of a relationship between attitudes, locus of control and the use of credit has been tested for by comparing the average scale values totalled on each factor by credit users and non-users (Table n.3).

Table 3 Attitudes, locus of control and credit use

Characteristics	Users	Non users	t-test	P-value
Overall attitude toward credit	0.253	0.197	10.550	0.000
Cognitive	0.324	0.245	9.247	0.000
Behavioural	0.243	0.182	9.435	0.000
Emotional	0.193	0.165	3.427	0.002
Locus of control	0.219	0.229	-1.767	0.770
N. of cases	909	947		

Note: Unpaired samples t-tests; from the results of Levene's pre-tests, equal group-variances are assumed for all characteristics.

In general, the values of attitudes are higher for users than for non-users, and their differences are always strongly statistically significant. Larger differences are recorded for the cognitive (0.079) and behavioural (0.061) components, while the emotional component has more similar values for the two groups (0.193 vs. 0.165); also, the importance if this component should be judged with care, because of its low performance on the consistency test (Alpha =

0.227). For the single components as well as for the overall attitude, the results are consistent with those presented in most of the existing literature and with expectations. Also, since data are quite well behaved, the results do not change remarkably if one uses more robust statistics of scale values, such as the median and Mann&Whitney's test[9].

The difference in the locus of control of users and non-users are, to the contrary, negligible and not statistically significant. While this outcome is not uncommon in the literature, it is quite surprising that the scale values are slightly higher for non-users than for users. A possible cause for this result is the effect of some confounding hidden factor; also, it might be a consequence of consumer *credit* being the object of the analyses, since most studies that find a more external locus among families with debt are about consumer *debt*[10]. This issue is dealt with further in the paper.

The first conclusion that can be drawn from these analyses is that one cannot reject a positive and significant relationship between attitudes and credit usage, while personality factors do not seem to bear on it.

Household economic condition and attitude toward credit

Having found a positive influence of attitude toward credit on its usage, it seems safe to check that this is not driven by a primary relationship between attitude and family need. It is indeed possible for interviewees to display a positive attitude toward credit in order to justify their family being into debt because of economic strain.

[9] The median comparisons and the outcomes of non-parametric tests are available from the authors upon request.

[10] Please refer to Section 1 for an explanation of the specific meaning of ‘debt’ and ‘credit’ in the psychological literature.

Table 4 Attitudes toward credit by household per-capita income

Per-capita income class (€ monthly)	Users	Non users
Up to 350	0.248	0.193
351 - 500	0.273	0.194
501 - 750	0.243	0.196
751 - 1000	0.273	0.207
1001 - 1250	0.230	0.189
1251 - 1500	0.238	0.219
1500 or more	0.284	0.178
Total	0.253	0.197
Regression analyses		
Slope coefficient	–0.150	0.003
P-value	0.053	0.705
R-squared	0.004	0.000

Note: Simple regression of the overall attitude score against per-capita log-income.

As shown in Table n.4, the stronger attitude among credit users compared to non-users does not change with the household's per-capita income class, which is taken to proxy the grade of family need[11]. Also, any clear relationship between attitudes and needs does not emerge within either of the two groups. This is confirmed by the results from cross-sectional regressions of attitude scale values against the logarithm of per-capita income, which are reported in the bottom panel of the table, run separately for users and non-users. The fit of both regressions is very poor and the slope coefficient is only weakly significant for credit users, showing a negative value. This particular outcome is driven by the highest income-class families of credit users, which have the strongest attitude toward credit (0.284): removing all cases belonging to this class makes the regression results indistinguishable from those for non-users.

[11] Per-capita income is computed using the Italian Bureau of Statistics equivalence scale, which adjusts the number of components divisor to consider the less than proportional increase of family needs with household size (ISTAT, 2009). In 903 cases (48.7 per cent of the total sample) the interviewees did not declare their family's income. Missing income values have been estimated by a two-stages Heckit model (Heckman, 1979) including the following explanatory variables: the family's domicile by geographic area, the number of income recipients, and an indicator of the family's ownership of its home. Non-reponses turn out to be less likely when the interviewee is the head of the household or as his age increases. Heckit estimates are available from the authors upon request.

Attitudes and credit use motivations

The attitude toward credit is also related to the motivations for using credit[12]. The comparison of average scale values between users and non-users shows that stronger attitudes prevail among the first ones across all reported motivations (Table n.5). However, the difference is larger and more significant when credit is used for unexpected, non-discretionary expenditure, because it is cheap or for realizing a project important for the family. The least difference is observed when borrowed money is used for hedonistic purposes.

Table 5 Attitudes toward credit by motivations

Declared motivations	**Users**	**Non users**	**t-test**	**P-values**
Financing an unexpected expenditure	0.247	0.186	8.118	0.000
Credit is cheap*	0.264	0.206	3.521	0.001
Financing an important project	0.257	0.211	3.669	0.000
Smoothing expenditure over the year	0.254	0.214	2.238	0.027
Satisfying a desire	0.256	0.222	2.071	0.039

Note: Unpaired samples t-tests; from the results of Levene's pre-tests, equal group-variances are assumed for all motivations except that 'Credit is cheap', where statistics are computed using group-specific variances.

These results are consistent with the cognitive and behavioural attitudes dominating the emotional in explaining the propensity toward credit, as shown before, both with respect to scale values and internal consistency of their constituent items. It is also worth pointing out that while for credit users average scale values are quite homogeneous across motivations, they are more dispersed among non-users, tending to be higher when associated to discretionary purposes.

Psychological factors and forms of consumer credit

As documented in the literature review section, the psychological traits of consumers can have an influence on the types of credit they prefer. The questionnaire included two questions specific to this topic. Credit user were asked to declare the actual form of credit they had

[12] For non-users, motivations refer to a hypothetical situation of recourse to credit.

used, while non-users were asked to tell what form they would have been most likely to use had they recurred to consumer credit[13]. This particular way of formulating the question is such to isolate the respondent's attitude toward credit, thus reducing the bias from attitude toward money that affects most previous studies[14].

Table 6 Attitude's and locus of control's influence on preferred form of credit

Preferred form of credit	**Household type**	**Coefficient**	**Std. Err.**	**P-value**
		Attitude		
Point-of-sale lending	User	1.746	0.609	0.004
	Non user	3.447	1.054	0.001
Personal credit	User	–1.774	0.669	0.008
	Non user	5.683	1.013	0.000
Salary loan	User	–6.485	1.266	0.000
	Non user	3.265	1.296	0.012
		Locus of Control		
Point-of-sale lending	User	1.007	0.584	0.085
	Non user	1.850	0.916	0.043
Personal credit	User	–2.521	0.663	0.000
	Non user	5.245	0.859	0.000
Salary loan	User	–3.654	1.174	0.002
	Non user	5.590	1.070	0.000

Notes: Multinomial logistic regressions of credit choice against attitude and locus of control scores; ‘Revolving credit card’ is the reference category; N. of cases = 1546 excluding non-respondents.

The data thus collected have been analysed in connection to the attitude toward credit and the locus of control of the interviewee, simultaneously for both users and non-users. To this purpose, two multinomial logistic regressions have been run, where the dependent variable is the preferred form of credit and the covariates are the household type (user or non-user) and, respectively, the attitude and the locus of control scale measures. For both regression, the reference category of the dependent variable is credit card financing. The

[13] A share equal to 32.7 per cent of non-users did not answer to this question. Therefore, the analyses presented in this paragraph have been made on a sample of 1546 households.

[14] See the review paragraph about personal attitudes in Section 1.

results are summarized in Table n.6; a positive (negative) value of any given coefficient means that the psychological factor of interest increases (decreases) the probability of using the corresponding form of credit instead of credit cards.

The estimates from the first regression (top panel) show that the hypothesis of a more favourable attitude toward debt not having any effect on the preferred form of consumer credit is strongly rejected across all household types. For actual users, the higher the attitude value the more likely is financing consumption with credit cards or point-of-sale lending, against more direct forms such as personal bank credit or salary loans. To the contrary, credit non-users are more likely to recur to direct forms as attitude toward credit gets stronger; point-of-sale lending is also significantly preferred to credit cards. Further analyses on the specific effect of the cognitive component return a results' pattern largely similar to what has emerged from the overall attitude's regression[15].

With respect to the locus-of-control regression (bottom panel), while the preference of point-of-sale lending to credit cards turns out to be only weakly affected by a more external locus for both users and non-users, the coefficients associated to direct credit forms are sizeable and highly significant. As external locus gets stronger, users are more likely to recur to credit cards, while the opposite is true for non-users, which tend to prefer personal credit and salary loans.

Attitudes vs. other factors in recourse to credit

The collected empirical evidence supports the claim that attitudes can be an important determinant in consumer credit decisions. In order to be more confident on this, it is necessary to check whether attitudes still exert an influence when other potentially relevant factors are taken simultaneously into account.

To this purpose, a binary logistic regression has been run of credit use on attitude toward credit, locus of control and several control covariates. Beyond customary demographic variables, controls include: the logarithm of current per-capita income, the interviewee expectations of the future household income and the ownership of the family home. This specification has been chosen by supervised backward selection, starting from a model that included more factors, which turned out not to be statistically significant and were then excluded. The regression results are displayed in Table n.7.

[15] The cognitive component is the most influential determinant of attitude indeed.

Table 7 Logistic regression analysis of recourse to credit

Covariate	Coefficient	Std. Err.	DoF	P-value
Domicile (by area)			3	0.000
North East	0.233	0.150	1	0.121
Center	0.189	0.150	1	0.209
South and Islands	0.656	0.129	1	0.000
Size of hometown (residents)			3	0.000
5000 to 39.999	0.295	0.137	1	0.031
40.000 to 249.999	0.253	0.156	1	0.105
250.000 and above	–0.392	0.177	1	0.026
Home ownership	0.614	0.157	1	0.000
Log of per-capita income	0.000	0.098	1	0.999
Income expectations			4	0.075
Incresing	–0.593	0.371	1	0.110
Stable	–0.360	0.361	1	0.318
Decreasing	–0.166	0.389	1	0.669
Strongly decreasing	0.237	0.629	1	0.706
Attitude toward credit	4.510	0.450	1	0.000
Locus of control (external)	–1.368	0.405	1	0.001
Costant	–0.892	0.759	1	0.240
N. of cases	1856	Log-Lik =	2375.57	
Hosmer&Lemeshow	$Chi^2(8) = 10.36$	Pseudo R^2 =	0.101	
goodness-of-fit test	P-value = 0.240			

Note: Reference categories for nominal and ordinal variables are as follows: 'North West' for Domicile, 'Up to 4999' for Size of hometown, 'Strongly decreasing' for Income expectations; the Pseudo R^2 is Cox and Snell's version.

The estimated regression has a very good fit to the sample data, as the pseudo-R^2 is quite high (10.1) and the Hosmer&Lemeshow test does not reject the null hypothesis of inconsistency between the observed and predicted values by a large margin (P-value = 0.24). The coefficient's and Wald test's values confirm that attitude has a major influence on consumer credit decision: as favour toward credit increases, so does the probability of taking on debt. Consistently with the permanent income hypothesis, very positive expectations about future income increase the probability of using credit, which smoothes consumption expenditures over time. On the other hand, current per-capita income does not have any significant effect.

Contrary to the outcome of other analyses presented in this paper, the (external) locus of control turns out to be significant and to have quite a positive influence on credit use. As already mentioned, this contrasts the findings of most existing research, whereby locus of control is either not significant or has a positive effect on taking on debt. Bearing in mind the limits imposed by the modest quality of the locus of control measure in the sample, this outcome may be explained in two ways. Firstly, the dependent variable is the purposeful use of consumer credit and not, as in most of the literature, a situation of consumer indebtness induced by adverse factors largely beyond the control of the individuals. Therefore, it does not seem unlikely for people with stronger internal locus to be keener to use consumer credit; the more so considering the importance of cognitive attitudes that has emerged in this study. As a second explanation, not unrelated to the former, it should be considered that in Italy consumer credit is a far less common phenomenon than amongst North American and British households, to which most existing studies refer. Therefore, in Italy the recourse to consumer credit may frequently be the outcome of conscious financial planning, which is typical of internal locus of control personality.

5 Conclusions

Based on the analyses of an original data set from a survey on two thousand Italian households, the empirical evidence presented in this paper supports the hypothesis that consumer-credit users and non-users differ with respect to their psychological profile. Particularly, the attitude toward credit is more favourable among the former. Also, a stronger attitude makes using consumer credit more likely, even taking into account the simultaneous effect of other factors that may influence family financial decisions, as per-capita income and earnings expectations.

Motivations for using credit are also related to attitude. Larger and positive differences in attitude between users and non-user are found with respect to those motivations that are related to conscious or planned recourse to credit. On the other hand, stronger attitudes are associated to discretionary consumption for both groups.

The declared preference for different forms of credit (such as personal loans, credit cards) too is influenced by attitudes. As attitude gets stronger, credit users are more likely to finance consumption with credit cards or point-of-sale lending rather than with direct credit, while the opposite is true for non-users. The cognitive component, which determines the individual's decision-making framework, seems to be crucial in shaping this relation.

Personality characteristics are also considered in this study. Specifically, the role played by the perception of the personal ability to determine one's own life events (‘locus of control’) has been examined. Consistently with some previous research, locus of control's effect on consumer credit does not clearly emerge in this study. While users and non-users do not differ significantly by locus of control scores, in general and by motivations for using credit, this is not so with respect to the preferred form of credit. Indeed, when the locus is more external (that is, the decision maker is more fatalistic) users are more likely to prefer credit cards, while the opposite is true for non-users, who would tend to make recourse to direct credit.

When the effects of attitude, personality and other potential determinants of consumer credit are considered together, external locus of control emerges as an important factor that reduces the probability of taking on debt. This result is partly at odds with some existing literature that has found a higher external locus among individuals with debt, and might be explained by this study focussing on the purposeful choice of using credit rather than on the passive condition of being into debt.

The main conclusion from this study is that an influence of psychological profile on families' credit behaviour cannot be rejected. While attitudes and personality factors, being complex features, are admittedly not easy to measure in survey-based studies, the topic is worth further investigation, as they contribute to the definition of consumer's preferences and decision-making framework. Also, these elements turn out to be complementary to expected income in shaping the outcome of credit decisions; integrating them into models based on economic rationality is therefore a promising line of research.

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