

# What moves payment card use? Evidence from a survey on Italian university students

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This paper sets out to analyse the factors influencing card payment use, both by considering these instruments' specific attributes and by combining the assumptions of Theory of Planned Behaviour (TPB) with Technology Acceptance Models (TAM).

A survey on 624 undergraduate students has been conducted in order to identify the personal, sociological and technological variables involved in e-money use.

The proposed model has been tested on undergraduate students' payment habit in using credit, debit and prepaid cards: we found that personal and technological attitudes, social and control beliefs, and payment instruments features are linked with payment card use.

Identification of variables affecting adoption by retail customers could be useful for both regulators and financial institutions.

Regulators, usually concerned with the behaviour of the institutions under their jurisdiction, could use these findings when drafting prudential and supervision rules governing financial institutions offering payment services.

By recognising issues that affect the behaviour of their customer segments, financial intermediaries can take advantage of aspects that produce differences and changes in payment practices, developing their product range in response.

Keywords: electronic money, payment instruments adoption, TPB models, TAM models, card payment use.

## Introduction

This paper sets out to analyse the factors influencing card payment instrument use, both by considering these instruments' specific attributes and by combining the assumptions of Theory of Planned Behaviour (TPB) with Technology Acceptance Models (TAM).

Studies in the field of payment card and electronic money use have considered customers' attitudes, evaluating the different occasions of use and the different characteristics of payment instruments (acceptance level, spending control, security), assuming that customers view different combinations of attributes as significant when judging the single payment instrument's suitability for use.

In order to identify the motivations that drive retail customers to use or reject electronic payment instruments, we will use the TPB (Ajzen, 1991; Ajzen, 2002) to develop the theoretical and empirical part of this study because this theory focuses on the intentions underlying the adoption of a specific form of behaviour.

There are some evidencies in literature who place more emphasis on the propensity to adopt technology as a factor which could affect the use of some electronic payment instruments: these studies derive from TAM (Davis, 1989; Davis et al., 1989; Venkatesh *et al.*, 2002), which have already been usefully employed in the financial services sector (Hayashi and Klee, 2003) and consider factors such as ease of use and perceived usefulness as the main drivers behind acceptance of a new technology.

A selection of all the factors above will be used in this paper in order to explain card payment use.

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# 1. Payment Instruments in Europe: a Cross-Country Comparison

In the last few years, the various aspects of the European payment services industry have been the subject of analysis by the financial and academic communities alike.

The reasons for this high level of interest seem to reflect a context and sector which have undergone profound changes.

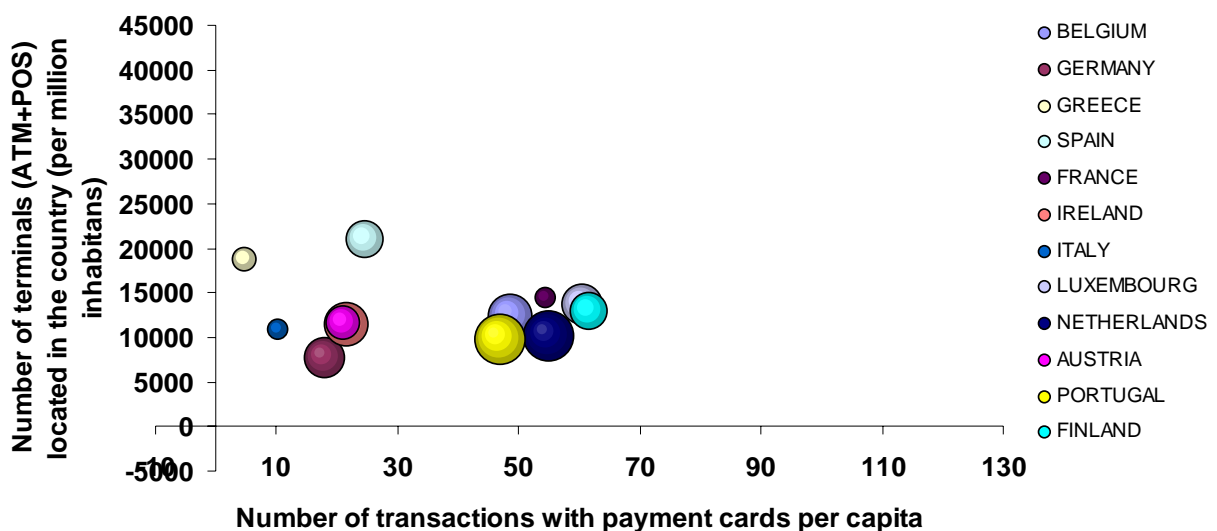
The design at the European level of “an area in which consumers, companies and other economic actors will be able to make and receive payments in euro, whether between or within national boundaries under the same basic conditions, rights and obligations, regardless of their location (SEPA)” (ECB, 2006a, p.7) has generated an increase in competition even in the basic financial services designed to meet payment needs.

The introduction of EC Directive 2000/46 regarding the taking up, pursuit of and prudential supervision of the business of electronic money institutions has established the possibility for these subjects, once authorised by their country of origin regulators, to operate on a pan European base, offering their payment services even beyond their national boundaries.

Competitive pressure, only partially explained by these changes, has encouraged a strong trend towards integration amongst the various market participants: only in some cases it has been caused by the search for synergies between different players, while in all the others the main explanation lies in technological variables.

The products offered by financial institutions in the payment services sector have thus undergone radical change: in the case of both Euro area countries and new entrants, there has been a gradual shift from paper-based (or cheque-oriented) countries such as Italy or France (Böhle *et al.*, 1999; Papameletiou D., 1999) to cashless forms of payment (credit cards, debit cards, prepaid cards and e-purses) (ECB, 2006b; BIS, 2000).

**FIGURE 1A – Payment system structure and card payment use in Euro Area, 2000**

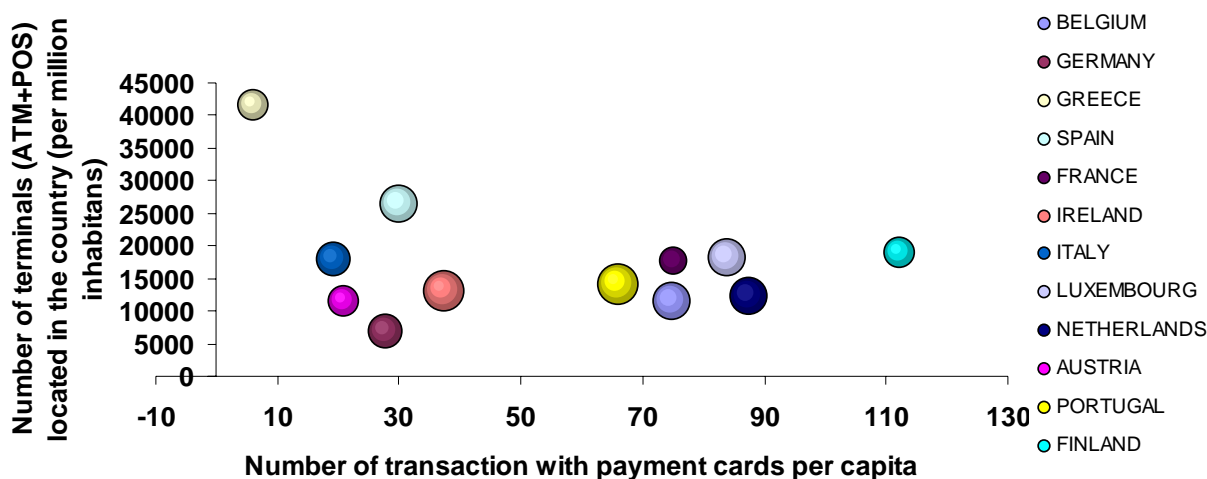


Source: ECB Bluebook, 2006. Size represents the penetration coefficient of cards on population. Belgium data are for year 2001. Spain data are for 2002. Austrian data are only for 2004.

Although the promotion of innovative payment instruments can be explained through the need on the part of the financial institutions involved to raise their efficiency levels, the adoption of these forms of payment by the retail segment is neither certain nor immediate.

In fact, the payment cards market is “two-sided”, that is to say it needs to attract two different categories of subjects, merchants and cardholders, through the simultaneous satisfaction of both groups’ payment needs (Rochet, Tirole, 2004).

**FIGURE 1B – Payment system structure and card payment use in Euro Area, 2004**



Source: ECB Bluebook, 2006.

Size represents the penetration coefficient of cards on population.

This situation has been the subject of a large body of literature interested in evaluating the network effects deriving from the market structure.

In fact, simply the enrolment of merchants, nationwide availability of ATMs and the generalised use of payment cards alone might be insufficient to provide a reasonable explanation for the purchasing and usage behaviour of the market's two sides, and the behaviour of cardholders in particular.

From an initial analysis of data relating to payment card market in the Euro area countries, it emerges that there are two different groups of countries, whose relative positions remain almost unchanged even over a five-year comparison (Figures 1a-1b).

The first group has a system structure in line with the European average, but a low number of electronic money transactions.

The second, although its payment card acceptance network is similar to that of countries in the first group, shows strong penetration in terms of the number of payment cards in relation to total population, and numerically higher per capita card use.

A comparison of the 2000 and 2004 data reveals that the increased spread of payment cards among the payment card structural change in the acceptance network has not enabled any of the countries considered to significantly increase the use of payment cards. Although in some European countries the introduction of innovative forms of payment has met with a favourable response from customers, in others this has happened only in part, because of the different features both of the structure of the payment system and of the customers in these geographical areas.

The net result of the institutional, technological and sectorial stimuli can therefore be measured only in terms of the higher or lower rate of use of electronic money instruments: in both cases it is useful to understand the reasons and the causes which have created these differences.

Therefore, when studying the characteristics of the demand side it seems useful to adopt an approach which also considers the factors which encourage or restrict the adoption of innovative forms of payment.

## **2. Empirical studies on payment card usage: a review**

Empirical studies related to payment card and electronic money use can be divided into two different groups.

The first group consists of all the studies that have interpreted the phenomenon with an emphasis on the macroeconomic effects of the processes by which different types of instrument are chosen.

Some authors (Humphrey et al., 1996) have analysed the phenomenon in relation to a number of economic (income per capita, ATM and POS availability) and institutional variables (crime rates, concentration of the banking system) which could be directly linked to the use of traditional and innovative payment instruments.

The empirical analyses have measured both differences among countries and impacts on the payment system as a whole, in terms of operation pricing and differences in product ranges, in search of theoretical models capable of providing a general equilibrium (Shy, Tarkka, 2002).

In this first group of studies it is essential to remember the work of Humphrey et al (2001), with its important contribution of a model for consumers' choice of different payment instruments (cash, checks and debit cards) based on own price, cross prices and payment substitution flexibility: the authors show that consumers are very sensitive to prices when it comes to making their choices.

Other works aim to explain the network effects connected to a two-sided market like the payment instrument market, by empirically identifying some of the key characteristics of a market of this kind: in particular, analysis of the main payment circuit flows has revealed the existence of a "single-homing effect", i.e. the customer's preference for constant use of the most widely accepted card, showing a positive relationship between customer use and degree of merchant acceptance (Rysman, 2006).

In other cases, the effects of innovation and competition in the card payment market have been measured, in order to explain and guide regulators' decisions (Mantel, McHugh, 2001).

The most useful inputs for this paper come from studies based on ad hoc surveys carried out to evaluate the relative importance of the explanatory variables linked to electronic money usage behaviour.

Studies in this field (Hirschman, 1982) have considered customers' attitudes, evaluating the different occasions of use and the different characteristics of payment instruments (acceptance level, spending control, security), assuming that customers view different combinations of attributes as significant when judging the single payment instrument's suitability for use.

In this context there have been several studies (Mantel, 2000; Stavins, 2001; Hayashi and Klee, 2003) which underline that social and demographic factors (Mantel, 2000; Stavins, 2001), such as wealth or personal preferences, can have a critical influence on e-money use.

Another work (Oleson, 2004) focused on the relationship between individual attitudes towards money and different needs expressed on the basis of Maslow's theory (Maslow, 1954): the results show that when an individual moves on to the satisfaction of higher needs, the importance given to money is lower, although there may be some gender differences.

## 2.1 Technology Acceptance Models (TAM) and payment card use

When analysing the factors which affect e-money usage behaviour, technological aspects must also be considered.

This has been the direction of study of a number of authors (Hayashi and Klee, 2003), who place more emphasis on the propensity to adopt technology as a factor which could affect the use of some electronic payment instruments: the results show that customers who use new technologies are also more willing to adopt electronic forms of payment.

These studies derive from Technology Acceptance Models (TAM), which have already been usefully employed in the financial services sector to characterise the drivers connected with electronic banking use.

The TAMs most widely accepted in the literature consider factors such as ease of use and perceived usefulness as the main drivers behind acceptance of a new technology (Davis, 1989; Davis et al., 1989).

Other authors, using the same approach, develop a model also including individual and personal elements, referable to intrinsic and extrinsic motivational components in the adoption of new technology (Venkatesh et al., 2002).

Although not clearly backed up by empirical findings, these variables describe the enjoyment associated to use of a certain technology, apart from the positive results deriving from its adoption.

Some of these factors will also be used to explain cashless payment instrument usage.

## 2.2 Electronic money and the Theory of Planned Behaviour

The study of human behaviour has enjoyed much success in the last three decades.

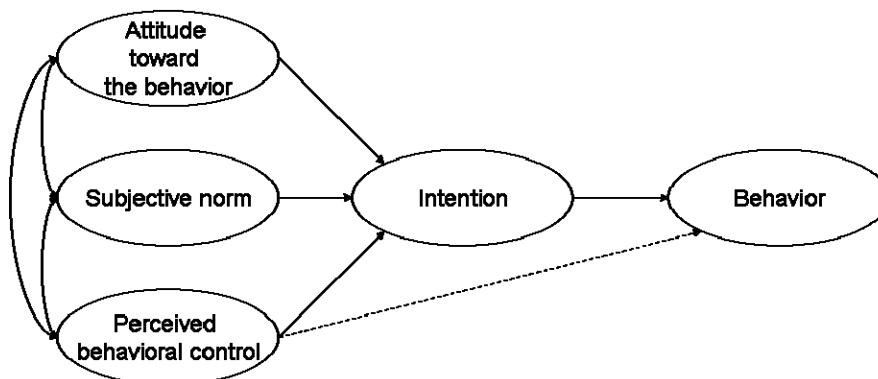
This degree of attention has mainly been due to these theories' tangible applications in business management and marketing, in particular in the definition of target segment characteristics and the evaluation of market response to the introduction of new products.

To identify the motivations that drive retail customers to use or reject payment cards, we will use the Theory of Planned Behaviour (TPB) (Ajzen, 1991) and its theoretical bases to develop the empirical part of this study: this theory focuses on the intentions underlying the adoption of a specific form of behaviour.

The TPB is a theoretical extension of the Theory of Reasoned Actions (TRA) (Fishbein, Ajzen, 1980) which starts from a very simple assumption: the stronger the intentions driving a person to behave in a particular way, the greater the probability that they will actually do so.

Therefore the analysis of the intention's antecedents becomes of major significance when identifying the drivers influencing even the indirect adoption of a form of behaviour.

**FIGURE 2 – The Theory of Planned Behavior (Ajzen, 1991)**



According to TPB, individual intentions to adopt a behaviour derive from a combination of three factors:

- attitudes to the behavior,
- subjective norms and
- perceived behavioral control.

The first derives from individual beliefs and is related to the degree to which a person takes a positive or negative view of the behaviour concerned.

The second is connected to the perceived social pressure to adopt or reject the behaviour.

The last factor regards the level of difficulties perceived by the individual in the adoption of the behaviour: it was recently used in empirical studies of students' money management skills (Kidwell, Turrisi, 2004) as a variable mitigating the effects of the other two, because it not only provides a proxy for satisfaction obtained from past experiences, but also often incorporates the factors that facilitate or prevent the achievement of the results of the specific behaviour under consideration.

In fact, *"...because many behaviours pose difficulties of execution that may limit volitional control, it is useful to consider perceived behavioural control in addition to intention..it can serve as a proxy for actual control and contribute to the prediction of the behaviour in question"* (Ajzen, 2002; 1).

This theoretical statement not only allows identification of the motivational factors that can affect individual behaviour, but also makes it possible to measure the relative power these factors have in the adoption of a given behaviour.

Some empirical works have applied TPB to the subject of payment cards (Furnham, 1984; Xiao *et al.*, 1995; Hayhoe *et al.*, 1999), defining the hierarchical scales potentially capable of measuring the three factors described above.

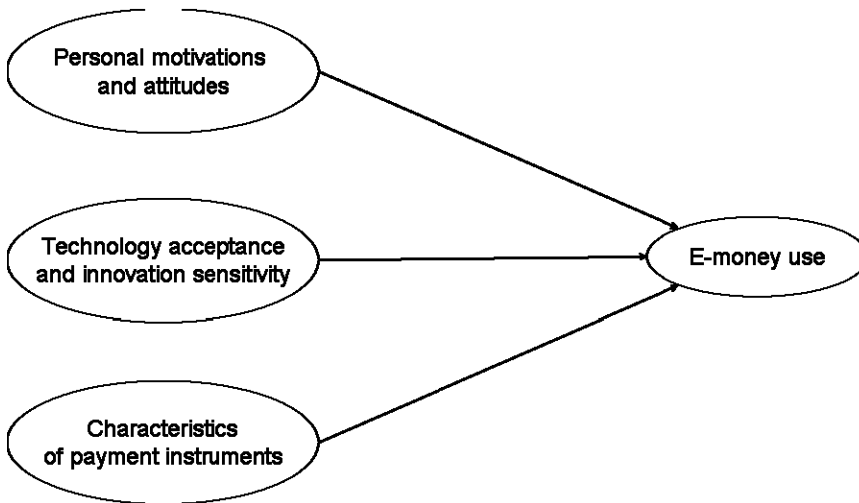
One suggested measurement tool is a semantic Likert-scale (unfavourable/favourable) based on added scores, composed of a series of statements regarding personal attitudes to payment cards, with the statements subdivided into three different dimensions referring to affective, cognitive and behavioural components (Xiao *et al.*, 1995; Rosenberg, Hoyland, 1960). This kind of measure will be applied in this study later.

### **3. The model**

The model presented in this work aims to identify the factors capable of explaining the use of payment cards, with simultaneous reference to the motivational approach of TPB, the key characteristics of the technology acceptance models and the efficiency and efficacy features typically ascribed to payment instruments (Ajzen, 1991; Hirschman, 1982; Hayhoe *et al.*, 1999, Venkatesh *et al.*, 2002), in order to answer to the following question

*RQ1: Do attitudes (motivational and technological) and payment instruments perceived features affect the payment cards frequency of use?*

**FIGURE 3 – The proposed model**



The TPB-related factors include the variables regarding attitudes to payment cards (affective, cognitive, behavioural), social pressures and the perceived behavioural control connected with their use.

The parameters used to establish the level of technological acceptance comprise six determinants: perceived ease of use (derived from TAM models), trust in technological devices, the familiarity and usefulness connected with technology devices use, the level of innovation-awareness, measured by the frequency with which these devices are changed during one year and a variable on number of owned high-tech devices.

Among the characteristics of payment instruments we considered their perceived efficiency and efficacy factors such as convenience, transaction speed, spending control, acceptance level, security, privacy, difficulty to obtain (only for cards) and use comfort. Remaining predictors are connected with demographics features (gender, education level), holding and banking account channels use (such as internet), and number of owned cards.

#### **4. Research methodology**

In the first part of the study, using a focus group of university students as suggested in previous studies, we selected the semantic and content dimensions best suited to represent and describe the motivational and technological factors to be analysed in the next part.

On the base of these results and drawing on a comparison with the relative literature, an initial 35-point questionnaire was tested on a small sample of 12 students.

The final version of the questionnaire<sup>2</sup> consisting of 27 questions has been leaved in a web page on the internet for three weeks, in order to be filled in by random sample of 623 Italian university students coming from more than 22 different universities in Italy.

This questionnaire was subdivided into five different parts:

- levels of banking use and payment habits,
- behaviours and attitudes towards cashless payment instruments,
- perceptions of the characteristics related to different payment instruments

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<sup>2</sup> See appendix for the complete version of questionnaire.

- innovative technology adoption and perceived importance of some of its characteristics,
- demographic features.

For the study presented here, only the answers given to 23 questions, considered most significant for the research, were considered.

We chose to carry out the analysis on a sample of Italian university students for two kinds of reasons.

The literature studying the e-money use has often used the student population as sample of reference (Kidwell, Turrisi, 2004; Hayhoe *et al.*, 1999), whether focusing on students' ability to manage their financial budgets or analysing the personal and attitudinal characteristics of students with a large number of credit cards.

Furthermore, Italian students have only recently begun to show significant interest in having and using payment cards, in contrast with the picture in other European countries (ECB, 2006); in fact, the per capita number of transactions performed with cashless instruments is lower than the European average.

This approach makes it particularly interesting to study the factors affecting cashless instrument payment use in the Italian student population, for both academics and practitioners; in fact, the latter may be keen to know the motivation underlying students' payments habits, because potentially they represent a very profitable market segment, in which the saturation of the card market is still close to zero.

#### 4.1. Sample description

The sample consisted of 623 Italian university students of which 211 males and 412 females classified by age as shown in the table below.

**TABLE 1 – Sample demographics**

	Age					Total
	18 - 21	22 - 25	26 - 30	31 - 35	36 - 40	
Female	22.8%	40.1%	2.4%	0.5%	0.3%	66.0%
Male	11.5%	20.2%	2.2%	0.0%	0.0%	34.0%
Total	34.3%	60.3%	4.6%	0.5%	0.3%	100.0%

Across the sample 47% comes from northern part of Italy, 29% from south and islands, 24% from central regions<sup>3</sup>; regarding the city size 53% of whole sample lives in centres with 50.000 inhabitants or less, the 28% between 50.000 and one million inhabitants, and 19% in cities with more than one million inhabitants.

The 60% across the sample has a high school diploma, whereas the remaining 40% has a first-level university degree; furthermore the 37% studies outside his city of residence.

With regards to the current account ownership, the 41% doesn't have any current account, whereas 40% has a bank account, 15% a postal account and remaining 4% has both of them; furthermore the 55% of those with a current account never used it to have a transaction.

<sup>3</sup> The sample composition follows the data collected by CINECA (an interuniversity consortium) database, which provides data about the relative importance of each region in terms of number of registered undergraduate students: analyzing that data it's possible to observe that 43% studies in the north, the 29% in the center and remaining 28% in south and islands. The sample proportions reflects these data.



The 69% of those interviewed stated that they held at least one cashless payment instrument (credit, debit and/or prepaid cards) while 31% did not have these instruments. In the table below are represented the number of cards owned by students, subdivided by gender.

**TABLE 2 – Number of cards owned**

	0	1	2	More than 2
Female	32.8%	42.5%	20.4%	4.4%
Male	28.8%	35.4%	23.6%	12.3%
Sample	31.4%	40.1%	21.5%	7.1%

The majority of those who were not holders are female (about 33%); comparing the number of cards owned, we can observe that male usually have over female more than one payment card in their wallets.

Nevertheless, we must underline that about 19% across all sample uses payment card held by someone else (typically their parents) regularly; an occasional use has been declared by 47% across whole sample (43% of them are females and 57% males).

Within those who don't have any payment card in their names the 42% declare an occasional use of cards held by others, whereas 14% declares an heavy use.

Across the whole sample debit and prepaid cards were the instruments most commonly owned by students (45% for debit and 43% for prepaid cards), while 20% had credit cards in their names.

#### 4.2 Variables and their measurement

Demographic characteristics (gender, age, education level, being outside for study) and variables related to banking and payment habits (account and payment card ownership, internet banking and others' payment card use) have been transformed into dummies.

The other variable measurement techniques were derived from previous literature (Ajzen, 1991; Hayhoe *et al.*, 1999; Xiao *et al.* 1995; Filotto, 1998).

Possible answers relating to attitudes to electronic payment instruments (i.e. the TPB measures) were organised on all positive 5-point semantic Likert-scale (strongly disagree/strongly agree) following the methodology used in other studies of attitudes to money and credit (Hayhoe *et al.*, 1999; Xiao *et al.* 1995).

For the answers related to both attitudes to innovation and perception of payment instrument characteristics we adopted a 5 point semantic Likert-scale (Likert, 1932; Filotto, 1998), which also considered the results of previous focus group studies, as suggested by the literature (Ajzen, 2002).

Attitudes to electronic forms of payment were measured using a narrower scale than in previous literature, adopting the general classification suggested by TPB (Ajzen, 1991).

This scale comprises 17 items subdivided as follows:

- 11 regarding attitudes
  - o 4 affective,
  - o 4 cognitive<sup>4</sup>,
  - o 3 behavioural

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<sup>4</sup> Statements related to cognitive attitudes have been presented in a negative form, following previous literature (Hayhoe *et al.*, 1999)

- 2 related to subjective norms
- 4 regarding perceived behavioural control.

The variables assessing awareness of technological innovation (4 items) were linked to the substitution frequency of high tech devices (PC, mobile phone, digital camera, mp3 reader), while attitudes towards two of these devices (PC and mobile phone) consisting in 4 items were measured considering factors such as usefulness, ease of use, familiarity and trust (Filotto, 1998).

Moreover, participants were asked to express their level of agreement with statements about the typical characteristics of payment instruments, including both cash and payment cards.

The intrinsic characteristics of payment cards and cash were subdivided into two different groups, one related to efficacy and the other to efficiency: those variables has been named as card (cash) efficacy and card (cash) efficiency.

The first group contained the answers regarding comfort of use, spending control, acceptance level, security and privacy, perceived spending freedom and the second those regarding the convenience, transaction speed, economic benefits and getting easiness associated to cash and payment card usage.

Missing data were dealt with using one of the “hot deck” non-parametric methods, widely used in economic analysis: the Nearest Neighbour Donor (NND) (Cicchitelli *et al.*, 1992), the methodological correctness of which has been confirmed by some empirical findings (Little, 1998; Chen, Shao, 2000).

The simple averages of all the variables previously described (except dummies) were calculated and were subsequently used to verify relationships with payment card use.

While credit, debit and prepaid cards frequency of use has been separately measured by students’ answers about declared use, the overall use has been measured by the square root of sum related to using behavior score declared in the questionnaire for each payment card.

## 5. Results

### 5.1. Descriptive statistics

Table 5 (see appendix) illustrates the correlations with the predictive variables for payment card usage, for the entire sample.

An initial examination reveals that only three variables are not statistically related to the use of electronic money: all the others have a strong relationship with the independent variable.

Relationships identified by TPB between attitudes (except behavioural) and factors in the other two categories (subjective norms and perceived behavioural control) are confirmed (Ajzen, 1991).

The mitigating function of perceived behavioural control compared with other variables (except the behaviours) also holds true, as indicated by previous literature (Kidwell, Turrisi, 2004).

There are significant relations between e-money use and payment instruments features: in fact card efficacy and efficiency are positively connected with payment cards use while negatively with cash efficacy and efficiency.

The results regarding attitudes towards technology are consistent with those of TAM models: the relationship between ease of use and perceived usefulness on the one hand,

and the other variables such as ease of use with familiarity and perceived trust in technological devices on the other, are particularly significant.

Efficacy and efficiency attributed to the various payment instruments are also connected by themselves: in particular if we take cards and cash characteristics separately it's possible to observe a positive and significant relationship between those payment features; moreover, score assigned to card efficacy is negatively related to cash features (efficacy and efficiency).

In addition, there is a significant correlation between efficacy and efficiency attributed to payment cards and perceived behavioural control: this relationship shows a link between the individual's perception of the potential of cashless payment instruments and the intrinsic characteristics of instruments themselves.

This statement is confirmed by the existence of a negative relation between perceived behavioral control and cash efficacy.

Subsequently, in order to check for differences between subsamples on holders of a cashless payment instrument and others, two-tailed t tests were performed on the predictive variables related to TPB, TAM and payment instruments characteristics (table 3).

**TABLE 3: TWO-TAILED T-TEST RESULTS**

**Individual variables that differentiate between students with a cashless payment instrument and without.**

**Two-tailed t-test results (only significant results are shown).**

**p values t-statistic**

**Students with at least one cashless payment instrument compared to students without (n=624; d.f.=622)**

AFFECTIVE	0.0000	6.8686
COGNITIVE	0.0000	-5.4837
BEHAVIORAL	0.0344	-2.1201
PERCEIVED BEHAVIORAL CONTROL	0.0000	7.2673
OWNED HIGH-TECH DEVICES	0.0000	5.6130
CHANGE IN HIGH-TECH DEVICES	0.0004	3.5845
PERCEIVED TECHNOLOGY EASE-OF-USE	0.0011	3.2864
PERCEIVED TECHNOLOGY FAMILIARITY	0.0004	3.5808
PERCEIVED TECHNOLOGY TRUST	0.0353	2.1096
CARD EFFICACY	0.0000	8.2816
CARD EFFICIENCY	0.0000	7.4461
CASH EFFICACY	0.0038	-2.9062

**Students with a credit card (Visa, Mastercard) compared to students without (n=624; d.f.=622)**

AFFECTIVE	0.0000	5.1221
COGNITIVE	0.0029	-2.9922
SUBJECTIVE NORMS	0.0116	2.5306
PERCEIVED BEHAVIORAL CONTROL	0.0000	4.5886
OWNED HIGH-TECH DEVICES	0.0000	6.4662
CHANGE IN HIGH TECH DEVICES	0.0018	3.1405
CARD EFFICACY	0.0000	4.8560
CARD EFFICIENCY	0.0104	2.5713
CASH EFFICACY	0.0014	-3.2072
CASH EFFICIENCY	0.0105	-2.5657

**Students with a debit card compared to students without (n=624; d.f.=622)**

AFFECTIVE	0.0000	7.0338
COGNITIVE	0.0005	-3.4733
PERCEIVED BEHAVIORAL CONTROL	0.0000	6.6655
OWNED HIGH-TECH DEVICES	0.0000	4.9706
PERCEIVED TECHNOLOGY EASE-OF-USE	0.0252	2.2430
PERCEIVED TECHNOLOGY TRUST	0.0197	2.3389
CARD EFFICACY	0.0000	8.0219
CARD EFFICIENCY	0.0000	4.5327
CASH EFFICACY	0.0062	-2.7459

The results show that students holding at least one payment card (credit, debit or prepaid card) were the ones who expressed a favourable opinion regarding affective attitude ( $p < 0.01$ ), and perceived behavioral control ( $p < 0.01$ ); the inverse relation with cognitive attitude ( $p < 0.01$ ) can be explained by the negative statements connected with this item (see appendix); test' results on behavioral attitude ( $p < 0.05$ ) shows that, in mean, people who holds at least one e-money instrument doesn't need anyone else.

Moreover, they were more aware to items related to technological innovation: looking at subsample means, they have got higher number of high-tech devices ( $p < 0.01$ ) and change them more frequently ( $p < 0.01$ ); finally, they not only appreciate cards features in terms of efficacy ( $p < 0.01$ ) and efficiency ( $p < 0.01$ ), but they also don't value the efficacy associated with cash use.

Subdividing the sample on the base of card type owned, we observe similar relations described above: in particular all TPB measures, except subjective norms for debit cards and behavioural attitude for credit and debit cards, are significant.

In terms of payment instruments characteristics for both credit and debit card holders, we found that cards efficacy and efficiency indicators are significant and negatively related with efficacy ascribed to cash payments.

## 5.2 Linear regression results

Linear regressions were performed on the different types of payment instruments across the whole sample.

The regressions examined credit, debit and prepaid card frequency of use on student' subsample owning at least one payment card ( $n=426$ ): a regression was also carried out regarding the average use of all the cashless instruments mentioned above.

The F-statistic values were all significant ( $p < 0.01$ ), although they varied from one regression to another.

Average values of the Variance Inflation Factor (VIF) on all the regressions did not highlight any multicollinearity problems: the average VIF regarding all cashless instruments was 1.14, on credit cards was 1.22, on debit cards was 1.20 and on prepaid cards was 1.17.

Furthermore, none of the VIF values for the predictive variables in any of the regressions exceeded the cut-off value of 2.

Finally, two kinds of tests were performed to check for heteroskedasticity: the White test (White, 1980) and the Breusch-Pagan Lagrange multiplier test (Breusch, Pagan, 1979; Cook, Weisberg, 1983).

The Breusch-Pagan test's results show absence of heteroskedasticity only in the regressions related to debit cards (on the contrary White test reveals heteroskedasticity); except for the overall cashless use in which none of the test highlights heteroskedasticity, in the other regressions the tests results are conflicting too: we therefore decided not to correct the regression for possible heteroskedasticity (see also appendix for details on diagnostics plots related to normality of residuals).

The results of these regressions are shown below in table 4.

If we consider overall cashless instrument use, ten out of a total of twenty-one predictive variables provide a satisfactory explanation of the phenomenon ( $R^2=0.41$ ).

All the variables related to TPB (except behavioral and subjective norms) are statistically significant: in particular affective ( $p < 0.01$ ), perceived behavioral control ( $p < 0.1$ ) and cognitive ( $p < 0.1$ ) (questions about this indicator have been submitted in a negative form).

Three out of six derived from TAM are significant too: in particular innovation awareness ( $p < 0.01$ ), familiarity and trust ( $p < 0.05$  for both) associated to high-tech devices.

Finally, also card efficacy ( $p < 0.1$ ), number of cards owned and ( $p < 0.01$ ) studying outside ( $p < 0.10$ ) variables are significant.

Looking at the results regarding credit card usage ( $R^2 = 0.30$ ), six variables are significant. In particular, with regards to TPB measures, affective variable ( $p < 0.01$ ), and those related to subjective norms ( $p < 0.01$ ) are the most so.

Number of owned cards ( $p < 0.01$ ) and three technology-related variables are significant: the most significant and positively related to credit card usage are awareness of innovation ( $p < 0.01$ ) number of owned high tech devices ( $p < 0.05$ ) and perceived familiarity ( $p < 0.05$ ).

**TABLE 4 – Linear regression on payment cards use**

<b>E-money use predictors (students with at least one payment card in their names)</b>				
	<b>Overall cashless use</b>	<b>Credit card use</b>	<b>Debit card use</b>	<b>Prepaid card use</b>
<b>Personal attitudes</b>				
Affective	0.147***	0.121**	0.139**	
Cognitive	-0.097**		-0.098	
Behavioural		-0.098		
<b>Social and control beliefs</b>				
Subjective norms		0.130***		
Perceived behavioural control	0.142***		0.123	0.161**
<b>Perceptions and attitudes toward technology</b>				
Owned high-tech devices		0.262**		-0.14
Change in high-tech devices	0.138***	0.15***		0.1*
Perceived technology usefulness				
Perceived technology ease-of-use		-0.121		0.074
Perceived technology familiarity	0.09**	0.184**	0.119	
Perceived technology trust	-0.079*	-0.094		-0.164**
<b>Payment instrument characteristics</b>				
Card efficacy		0.115	0.132	
Card efficiency				0.117
Cash efficacy				
Cash efficiency	-0.063*	-0.084		
<b>Demographics</b>				
Gender		0.095		
Education level			0.123	-0.129
Studying outside	0.079**	0.134	0.137	
<b>Banking use and payment habits</b>				
Owned cards	0.431***	0.513***	0.338***	0.372***
Bank account	0.080*	0.134	0.83***	-0.756***
Internet banking				0.182*
n	426	428	428	428
R <sup>2</sup>	0.412	0.302	0.257	0.172
Adjusted R <sup>2</sup>	0.398	0.278	0.241	0.152
F statistics	29.08	12.76	16.12	8.64
White test (p-values)	0.442	0.082	0.042	0.059
Breusch-Pagan test	0.363	0.000	0.426	0.000
VIF (mean)	1.14	1.22	1.20	1.17

\* $p < 0.1$  \*\* $p < 0.05$  \*\*\* $p < 0.01$

The main characteristics of payment instruments have a positive relationship with the use of credit cards, in particular with regard to the efficacy of cards and in a negative form with cash efficiency.

In the regression regarding debit cards ( $R^2 = 0.26$ ) only three variables are significant: the most one, apart from the number of cards owned ( $p < 0.01$ ), and the existence of a banking account, is the affective attitude ( $p < 0.1$ ).

Although less effective in providing explanations ( $R^2 = 0.17$ ), the regression on prepaid cards reveals six predictive variables.

Only perceived behavioral control is significant ( $p < 0.05$ ); no variables connected to personal attitudes are significant.

The regression shows a significant strongly negative relation with having a bank account variable ( $p < 0.01$ ), and a positive relation with number of owned cards ( $p < 0.01$ ) use of internet banking.

The lack of trust in technology devices ( $p < 0.05$ ) and innovation awareness ( $p < 0.1$ ) are significant too.

## 6. Conclusions and implications for further research

This paper shows that payment card use is linked not only with these instruments' typical characteristics, but also with some factors connected to motivational, social and technological variables.

An examination of the data related to average use of payment cards reveals that frequency of use is constantly correlated to the number of payment cards owned, in line with findings in the previous literature (Xiao *et al.*, 1995).

The survey demonstrated that a higher awareness of technological innovation, measured by the frequency with which technological devices are upgraded, affects payment card use, in particular the use of credit and prepaid cards.

Furthermore, while the analysis of personal attitudes is significant in explaining credit card usage, technological factors have a clearer effect on prepaid cards.

Among personal attitudes, the affective component is responsible more than any other factors for credit and debit card use, confirming the results of previous studies (Hayhoe *et al.*, 1999): it's very interesting to observe that TPB measures are not related to use of prepaid cards, where payer's commitment is lower than in using other payment instruments (such as credit cards).

Perceived behavioural control is positively significant for prepaid cards: this result can be explained considering that the use of prepaid cards may generate an higher level of perceived control about the potential transaction.

In fact, larger economic losses could be experienced by other payment instruments' users, such as credit or debit cards.

Perceptions and relationship with technology devices can affect credit card use above all the other payment instruments; looking at results we can observe that credit card customers are more aware of technological innovation.

This feature is not observable for prepaid and debit card users: probably it is due to the low number of owned high tech devices, or for the lower degree of trust in those devices.

Demographic characteristics don't have a significant influence on use of e-money products, except if users study outside their own city.

Finally the banking account ownership is likely to have a significant influence in all the regressions analyzed: in particular it's important to explain use of debit cards, as expected; moreover its negative relation with use of prepaid cards seems to give to these payment instruments an alternative way to make payments without having current account ownership

Even if these findings can be useful and effective for financial institutions offering payment services, the model presented in this paper has some limitations.

In particular, the phenomenon was analysed exclusively from the demand side, considering the ranges of products on offer as exogenous.

This fails to consider that some payment card systems offer customers only a limited choice of alternatives, both because financial institutions' product ranges do not envisage

multiple forms of payment, and because merchants do not accept the payment instruments concerned.

Furthermore, the model does not include variables regarding the moment of use (Hirschman, 1982), transaction characteristics, such as the value and the price paid for the payment service, or point of sale features, such as the level of contact with the vendor (online/offline) and the nature of the products bought.

Bringing them into the equation could be very useful, not only to broaden understanding of the variables which explain the exclusive or combined use of a specific instrument, but also to identify any substitution effects between instruments with different features.

The approach developed here could finally be very useful to identify correctly the variables generally connected to the unbanked and underbanked market segment, as migrants, still not so profoundly studied from this point of view: this perspective could support marketing initiatives not only pricing-based, but aimed to bring customers up in order to render the undertaken value-added initiatives more considerable.

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APPENDIX

TABLE 5 – Pairwise correlations between predictors of cashless instruments use (p-values in parenthesis)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1) Monetary um	1																									
2) Attitude	0.3679*** (0.000)	1																								
3) Consists	-0.2458*** (0.000)	-0.371*** (0.000)	1																							
4) Behavioral	-0.021 (0.808)	0.250*** (0.000)	0.0158 (0.924)	1																						
5) Subjective norms	0.1628*** (0.000)	0.152*** (0.000)	0.046 (0.198)	0.0986*** (0.013)	1																					
6) Perceived behavioral control	0.272*** (0.000)	0.212*** (0.000)	-0.072** (0.033)	0.224*** (0.000)	0.273*** (0.000)	1																				
7) Similar	-0.112** (0.024)	-0.0813 (0.128)	0.028 (0.494)	-0.062 (0.372)	0.203 (0.000)	-0.262*** (0.000)	1																			
8) Studying outside	0.1348*** (0.000)	0.0027 (0.843)	-0.0226 (0.383)	-0.0285 (0.483)	0.2601 (0.000)	0.0823** (0.034)	-0.0013 (0.978)	1																		
9) Education level	0.0978** (0.017)	-0.1614 (0.184)	0.028 (0.383)	-0.0076 (0.812)	0.0523 (0.229)	0.0489 (0.239)	0.0157 (0.488)	0.0298** (0.012)	1																	
10) Bank account	0.2458*** (0.000)	0.176** (0.018)	-0.0384 (0.183)	-0.0246 (0.167)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	1																
11) Internet banking	0.4548*** (0.000)	0.2101*** (0.000)	-0.2533*** (0.000)	0.028 (0.248)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	-0.1332** (0.034)	0.0364 (0.329)	0.4448*** (0.000)	1															
12) Occasional use (other cards)	0.1777*** (0.000)	0.1107*** (0.000)	-0.0384 (0.183)	0.028 (0.248)	0.2601*** (0.000)	0.2601*** (0.000)	-0.0813** (0.024)	-0.0813** (0.024)	0.028 (0.494)	0.028 (0.494)	0.028 (0.494)	1														
12) Regular use (other cards)	0.2601*** (0.000)	0.1777*** (0.000)	-0.0384 (0.183)	0.028 (0.248)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	1													
14) General search	0.2144*** (0.000)	0.2293*** (0.000)	-0.072** (0.033)	0.224*** (0.000)	0.273*** (0.000)	0.273*** (0.000)	-0.121*** (0.000)	0.1081*** (0.000)	0.14*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	1												
16) Card efficacy	0.2601*** (0.000)	0.2601*** (0.000)	-0.2533*** (0.000)	0.028 (0.248)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	1											
16) Card efficiency	0.2601*** (0.000)	0.2601*** (0.000)	-0.2533*** (0.000)	0.028 (0.248)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	1										
17) Cash efficacy	0.2601*** (0.000)	0.2601*** (0.000)	0.1332** (0.012)	0.0364 (0.329)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	1									
18) Cash efficiency	0.2601*** (0.000)	0.2601*** (0.000)	0.1332** (0.012)	0.0364 (0.329)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	1								
19) Owned high-tech device	0.272*** (0.000)	0.212*** (0.000)	-0.072** (0.033)	0.224*** (0.000)	0.273*** (0.000)	0.273*** (0.000)	-0.121*** (0.000)	0.1081*** (0.000)	0.14*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	1							
20) Shared in high-tech device	0.2601*** (0.000)	0.2601*** (0.000)	-0.2533*** (0.000)	0.028 (0.248)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	1						
21) Perceived technology usefulness	0.0482 (0.283)	0.1228*** (0.000)	-0.0444 (0.183)	0.0821 (0.039)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	1					
22) Perceived technology ease-of-use	0.1184*** (0.000)	0.064 (0.037)	-0.0728** (0.033)	-0.048 (0.112)	0.2601*** (0.000)	0.2601*** (0.000)	-0.0131 (0.633)	0.0248 (0.053)	-0.0471 (0.000)	-0.028 (0.229)	0.1228*** (0.000)	-0.003 (0.924)	0.0248 (0.053)	0.0248 (0.053)	0.1228*** (0.000)	0.1228*** (0.000)	0.1228*** (0.000)	0.1228*** (0.000)	0.1228*** (0.000)	0.1228*** (0.000)	0.1228*** (0.000)	1				
24) Perceived technology familiarity	0.112** (0.024)	0.0813 (0.128)	0.028 (0.494)	-0.062 (0.372)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	1			
24) Perceived technology trust	0.04 (0.348)	0.078** (0.028)	-0.1228** (0.000)	0.0271 (0.483)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	0.2601*** (0.000)	1	

n=434      \*p<0.10      \*\*p<0.05      \*\*\*p<0.01

Figure 4a – The distribution of residuals in the regression related to overall cashless use

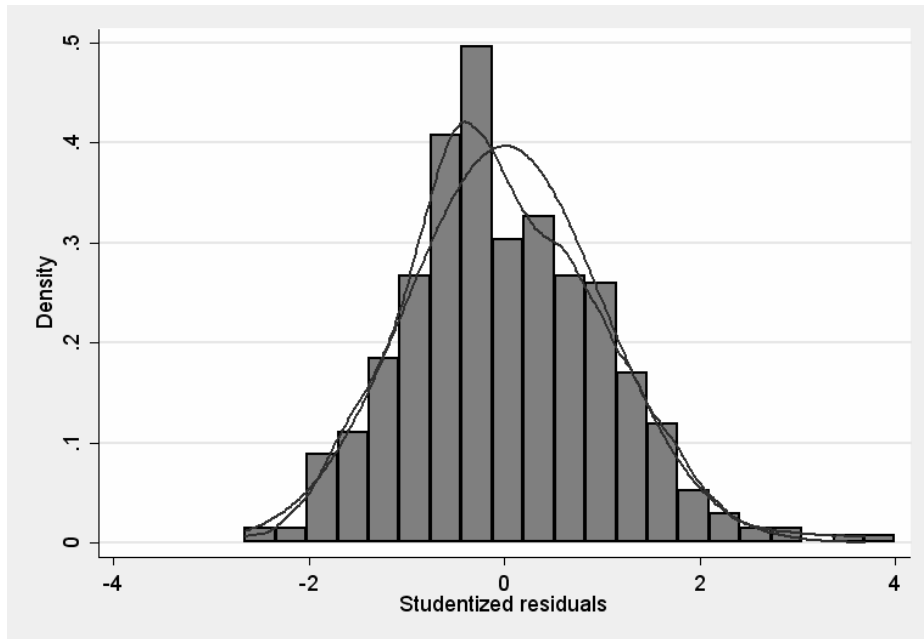
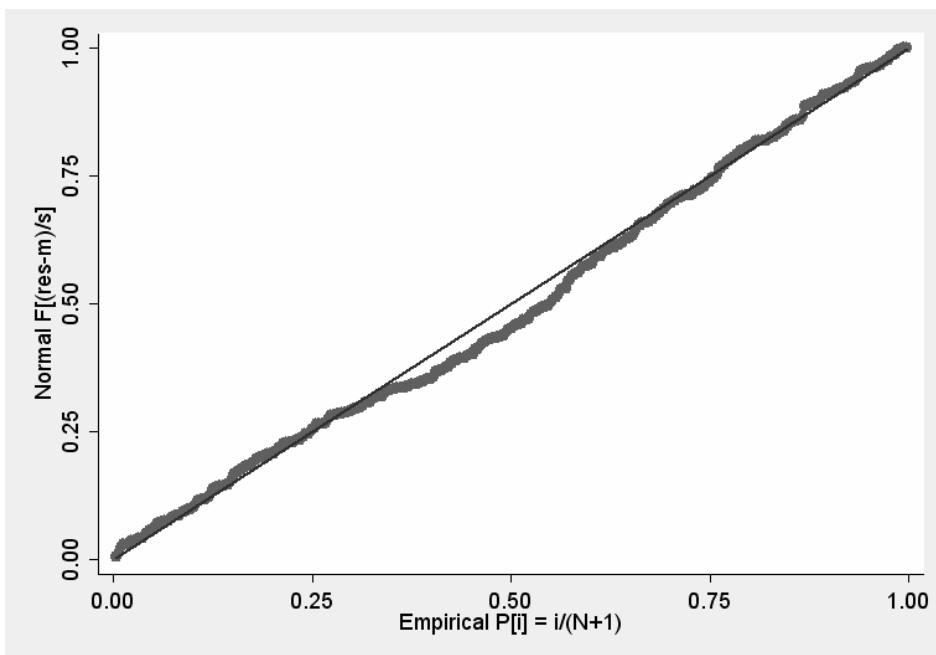


Figure 4b – Standardized normal probability plot related to overall cashless instruments use



## The questionnaire

1) Sei titolare di uno o più conti correnti?

Bancario	<input type="checkbox"/>
Postale	<input type="checkbox"/>
Sia bancario che postale	<input type="checkbox"/>
No	<input type="checkbox"/>

2) Utilizzi Internet per operare sul tuo conto corrente?

Sì	<input type="checkbox"/>
No	<input type="checkbox"/>

3) Sei titolare di uno di questi strumenti di pagamento? (**sono possibili risposte multiple**)

Bancomat	<input type="checkbox"/>
Carta di credito	<input type="checkbox"/>
Visa, Mastercard	<input type="checkbox"/>
Diners, American Express	<input type="checkbox"/>
Carta Prepagata	<input type="checkbox"/>
PostePay	<input type="checkbox"/>
Altra carta prepagata	<input type="checkbox"/>
Borsellino elettronico (es. PayPal)	<input type="checkbox"/>
Non ne possiedo	<input type="checkbox"/>

4) Quante carte possiedi? (di credito, bancomat o prepagate)

Una	<input type="checkbox"/>
Due	<input type="checkbox"/>
Più di due	<input type="checkbox"/>
Nessuna	<input type="checkbox"/>

5) Hai mai utilizzato carte intestate ai tuoi familiari? (**sono possibili risposte multiple**)

***Si, ma solo in occasioni particolari, per***

Viaggi all'estero	<input type="checkbox"/>
Acquisti di importo elevato	<input type="checkbox"/>
Acquisti online	<input type="checkbox"/>
Prelievi contante	<input type="checkbox"/>

***No, non le ho mai usate***

***Si, abitualmente per***

Acquisti di importo elevato	<input type="checkbox"/>
Acquisti online	<input type="checkbox"/>
Acquisti ricorrenti (benzina, ricariche cellulari..)	<input type="checkbox"/>
Prelievi contante	<input type="checkbox"/>

6) Con quale frequenza utilizzi i seguenti strumenti di pagamento (anche se non sono intestati a te)?

	Quotidianamente	2/3 volte a settimana	2/3 volte al mese	Raramente durante l'anno	Mai
Carta di credito	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bancomat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Carta prepagata	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Assegno	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7) Immagina di dover effettuare **una transazione in un negozio fisico** e di avere a disposizione tutti gli strumenti di pagamento qui sotto elencati. Con quali strumenti pagheresti ognuno degli importi indicati? (è possibile esprimere una sola risposta per riga)

	Carta di credito	Carta prepagata	PagoBancomat	Carta prepagata	Assegno	Contante
Fino a 20 €	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21-50 €	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51-150 €	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
151-300 €	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Più di 300 €	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8) Immagina di dover effettuare **una transazione in internet** e di avere a disposizione tutti gli strumenti di pagamento qui sotto elencati. Con quali strumenti pagheresti ognuno degli importi indicati? (è possibile esprimere una sola risposta per riga).

	Carta di credito	Carta prepagata	Contrassegno	PagoBancomat	Carta di credito alla consegna
Fino a 20 €	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21-50 €	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51-150 €	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
151-300 €	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Più di 300 €	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9) Esprimi il grado (per nulla d'accordo/pienamente d'accordo) con cui condividi le seguenti affermazioni relative alle carte di pagamento (es. carta di credito, bancomat, carte prepagate)

	Per nulla	Poco	Abbastanza	Molto	Pienamente
Possedere una carta mi rende soddisfatto	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mi piace utilizzare una carta per le mie spese	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Utilizzare una carta mi fa sentire libero di spendere	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Penso che non sia saggio pagare con la carta	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L'elevato utilizzo delle carte porta a spendere di più	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Il costo della carta è troppo alto	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L'uso della carta fa aumentare ogni giorno il debito con la mia banca	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vorrei possedere più carte di quelle che ho	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ho intenzione di richiedere una/un'altra carta	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vorrei provare tutti i tipi di carta	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Utilizzare una carta mi fa sentire più indipendente	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Penso di poter gestire facilmente le transazioni effettuate con la mia carta di pagamento	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Se uso una carta posso gestire meglio le mie spese	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Molte persone pensano che pagare con la carta non sia conveniente	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Se uso una carta non ho il controllo sul pagamento che effettuo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Le persone che frequento abitualmente pagano spesso con una carta	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
La carta mi fornisce sempre traccia degli acquisti che effettuo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10) Esprimi il grado di condivisione delle seguenti affermazioni relative alle CARTE DI PAGAMENTO (carte di credito, bancomat, carte prepagate), sbarrando una casella in funzione di quanto ti senti vicino ad una delle due affermazioni.

Sono comode	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sono scomode
Il pagamento è lento	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Il pagamento è veloce
Mi permettono di tenere sotto controllo quanto spendo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Non ho pieno controllo sulle mie spese
Non sempre sono accettate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sono accettate ovunque
Sono strumenti sicuri	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sono strumenti rischiosi
Invadono la mia privacy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Tutelano la mia privacy
Sono convenienti	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sono costose
Non è mai disponibile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	E' sempre disponibile
Sono sicure per gli acquisti su Internet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Non sono sicure per gli acquisti su Internet
Sono facili da ottenere	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sono difficili da ottenere
Non mi fanno sentire libero di spendere	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Mi fanno sentire libero di spendere

11) Esprimi il grado di condivisione delle seguenti affermazioni relative al **CONTANTE**, sbarrando una casella in funzione di quanto ti senti vicino ad una delle due affermazioni.

E' comodo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	E' scomodo
Il pagamento è lento	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Il pagamento è veloce
Mi permette di verificare quanto spendo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Non ho l'esatta percezione delle mie spese
Non sempre è accettato	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	E' accettato ovunque
E' uno strumento sicuro	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	E' uno strumento rischioso
Invade la mia privacy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Tutela la mia privacy
E' conveniente	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	E' costoso
Non è mai disponibile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	E' sempre disponibile
Non mi fanno sentire libero di spendere	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Mi fanno sentire libero di spendere

12) Parliamo ora di **CARTE PREPAGATE**. Esprimi il grado di condivisione delle seguenti affermazioni relative alle **CARTE PREPAGATE** sbarrando una casella in funzione di quanto ti senti vicino ad una delle due affermazioni.

Sono comode	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sono scomode
Il pagamento è lento	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Il pagamento è veloce
Mi permettono di tenere sotto controllo quanto spendo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Non ho pieno controllo sulle mie spese
Non sempre sono accettate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sono accettate ovunque
Sono sicure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Non sono sicure
Invadono la mia privacy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Tutelano la mia privacy
Sono convenienti	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sono costose
Sono facili da ottenere	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sono difficili da ottenere
Si ricaricano con difficoltà	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sono facili da ricaricare
Hanno una capacità di spesa troppo limitata	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Non hanno eccessive limitazioni di spesa
Non mi fanno sentire libero di spendere	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Mi fanno sentire libero di spendere
Sono sicure per gli acquisti su Internet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Non sono sicure per gli acquisti su Internet

13) Hai mai sentito parlare di queste carte prepagate?

	Si	No		Si	No
Carta Jeans	<input type="checkbox"/>	<input type="checkbox"/>	Vodafone Cash Card	<input type="checkbox"/>	<input type="checkbox"/>
Carta Chiara	<input type="checkbox"/>	<input type="checkbox"/>	Soldintasca	<input type="checkbox"/>	<input type="checkbox"/>
Postepay	<input type="checkbox"/>	<input type="checkbox"/>	Carta Perfecto	<input type="checkbox"/>	<input type="checkbox"/>
Carta Capitalia Click Giovani	<input type="checkbox"/>	<input type="checkbox"/>	Carta PagoWind	<input type="checkbox"/>	<input type="checkbox"/>

14) Una carta prepagata deve darmi la possibilità di...(sbarrare la casella in funzione di quanto pensi sia importante l'erogazione di questi servizi)

	Per nulla	Poco	Abbastanza	Molto	Pienamente
Fare acquisti su internet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prelevare denaro all'estero	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Facilitare il pagamento dei parcheggi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ricaricare il telefonino	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inviare/ricevere denaro ad/da altre persone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Essere avvisato via sms ad ogni utilizzo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Essere avvisato via mail ad ogni utilizzo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ricaricarla senza fare file	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ricaricarla via internet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ricaricarla in un luogo vicino casa/lavoro	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15) Immagina di avere una carta prepagata appositamente creata per soddisfare le tue esigenze di studente universitario. Questa carta dovrebbe darti la possibilità di...(sbarrare la casella in funzione di quanto pensi sia importante l'erogazione di questi servizi).

	Per nulla	Poco	Abbastanza	Molto	Pienamente
Prenotarmi agli esami	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pagare i certificati rilasciati dalla mia università	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pagare le fotocopie/dispense	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pagare la mensa	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pagare i libri	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Acquistare beni presso i distributori automatici (caffè...)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pagare le tasse universitarie	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accreditare gli importi per borse di studio/collaborazione/contributi ERASMUS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inviare e ricevere denaro dagli altri studenti	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16) Indicare quali tra questi beni a contenuto tecnologico possiedi ed utilizzi abitualmente (sono possibili risposte multiple)

Telefono cellulare	<input type="checkbox"/>
Lettore mp3	<input type="checkbox"/>
Fotocamera digitale	<input type="checkbox"/>
Palmare/Blackberry	<input type="checkbox"/>
Navigatore satellitare	<input type="checkbox"/>
PC portatile	<input type="checkbox"/>
PC fisso	<input type="checkbox"/>
Linea veloce di collegamento ad Internet (DSL, fibra ottica)	<input type="checkbox"/>
Collegamento ad internet senza fili	<input type="checkbox"/>

17) Se li possiedi, ogni quanto sei solito cambiare i seguenti beni a contenuto tecnologico?

	Meno di un anno	Tra 1 anno e 2 anni	Oltre 2 anni	Mai cambiato	Non lo possiedo
Telefono cellulare	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fotocamera digitale	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PC portatile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lettore mp3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18) Secondo te il computer è **(sbarra una casella in funzione di quanto ti senti vicino ad uno dei due estremi)**

Indispensabile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Inutile
Complesso	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Facile da usare
Familiare	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Oscuro
Inaffidabile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Affidabile

19) Secondo te il telefono cellulare è **(scegli una casella in funzione di quanto ti senti vicino ad uno dei due estremi)**

Indispensabile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Inutile
Complesso	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Facile da usare
Familiare	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Oscuro
Inaffidabile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Affidabile

20) Et 

18-21  22-25  26-30  31-40  Oltre 40

21) Sesso

M  F

22) Grado di istruzione

Diploma scuola superiore

Laurea triennale

Laurea specialistica/quadriennale

Master/Ph.D./Scuola Specializzazione

23) Professione

Studente	<input type="checkbox"/>	Lavoratore dipendente	<input type="checkbox"/>
Libero professionista	<input type="checkbox"/>	Altro	<input type="checkbox"/>
Imprenditore	<input type="checkbox"/>	Non occupato	<input type="checkbox"/>

24) Area geografica di residenza

Nord

Centro

Sud

Isole

25) Ampiezza del comune di residenza

Meno di 50.000 abitanti

Tra 50.000 e 100.000 abitanti

Tra 100.000 e 500.000 abitanti

Tra 500.000 ed 1.000.000 di abitanti

Oltre 1.000.000 di abitanti

26) Università di appartenenza

.....

27) Sei uno studente fuorisede?

Si	<input type="checkbox"/>
No	<input type="checkbox"/>