

Testing theories on happiness: a questionnaire

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Abstract

This paper investigates the relationships between happiness and satisfaction and a host of socio-economic variables. We also introduce some new regressors not considered before in the literature such as risk aversion, perceived level of inflation and unemployment, perceived quality of public services. Besides testing the determinants of happiness and satisfaction, we ask respondents which concept of happiness they have, in a list of nine definitions proposed. The data set consists of a random sample of individuals from the Italian population. We use a questionnaire realized for this study. Happiness is measured on a four point scale (unhappy, not very happy, enough happy, very happy) and satisfaction on a 10 point scale (from unsatisfied to very satisfied). An ordered probit model is used to econometrically estimate the happiness and satisfaction equations. Some results are consistent with theoretical predictions and show that happiness increases with income, employment, marriage or cohabitation, some relational goods and altruism. We find also that for persons who prefer an outer concepts of happiness and express objective desires, income and the presence of job are significant variables, while they are not significant in the case of subjective concepts of happiness and subjective desires.

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1. Introduction

In the past twenty-five years the issue of happiness has become once again the centre of interest of economists. This renewed attention derives from the emerging of new evidence: in countries with a higher income getting richer does not make people happier. These empirical results have given rise to several questions about what are the determinants of happiness. The aim of this work is to add some new empirical evidence about concepts and socio-economic determinants of happiness, by introducing either some definitions of happiness or some new explanatory variables (risk aversion, perceived level of inflation and unemployment, perceived quality of public services) not considered before in the literature. One original feature of this study is also the attempt to put together these two branches of economic literature on concepts and socio-economic determinants of happiness.

In order to understand people's concept of happiness, we follow the conceptual referent theory of happiness (CRT) of Rojas (2005), and identify several definitions and concepts of happiness. In particular, we focus on the concepts of happiness as fortune, pleasure, virtue, bliss, laetitia, tranquillity, harmony, life satisfaction, realization and human flourishing and the practice of virtue. While in Stoicism, Virtue, Hedonism, Tranquillity, Life Satisfaction and Realization there is a clear philosophical referent, for the other meanings of happiness, such as fortune, harmony, bliss and laetitia, we use operational definitions. We divide the different theories of happiness in two categories: those based on the hypothesis of the existence of happiness producing external entities, and those based on the hypothesis of an endogenous process of internal bliss. According to the first group of theories, happiness is the result of an external stimulus. Material goods and human activities have thus an important role in individual's life. The interior process, on the contrary, implies that happiness stems from feelings that originate and persist endogenously within the minds of human beings. According to these theories, happiness can be for example the result of feeling in union with God, or of a serene indifference towards the material world, or a state of harmony with the universe. We try to verify which are the structural determinants of happiness for the whole sample first, and then for two groups of definitions of happiness (objective and subjective), including among determinants new variables (risk aversion, perceived level of inflation and unemployment, perceived quality of public services) never considered before in empirical literature.

Besides these two groups of definitions of happiness, we formulated two questions about happiness as desires and important events in life. Desires can be grouped in wishes of material objects (money, house), desire of more free time or satisfaction of what ones have obtained in life. We do the same for events: to buy a house is considered an objective event, to take a degree or to overcome a difficulty is considered a personal achievement, and to marry and have children is thought as relational events. For people choosing different events or desires, we try to identify which are the determinants of happiness and satisfaction. An attempt is also made to consider the level of happiness as a dichotomous variable, in order to run a simple probit estimation and study what are the determinants of happiness.

The paper has been structured as follow: the second section surveys the meaning of the word happiness during ages. The third section describes the different definitions and concepts of happiness. Section four provides explanations about the rational, structure of the questionnaire and the hypothesis we want to test. Section five presents the new database and some preliminary results. Section six describes the methodology. Section seven presents the empirical work. Section eighth formulates preliminary conclusions on the hypotheses tested.

2. The meaning of the word "happiness" over the ages

In the last twenty-five years the issue of happiness has become once again the focal interest of economists. This renewed attention derives from the emergence of new evidence: in countries with a higher income to own more income does not make people happier. The idea that wealth does not bring happiness, in fact, was quite common among economists. However, they believed that although a rise in wealth would not produce a rise in affluence, neither would it cause its decrease.

It seems useful to understand what we mean by the word happiness in order to find our way in this debate. In the Greek culture the word happiness was translated by the word eudaimonia, which has the double meaning of happiness and fortune. The root of the word eudaimonia, in fact, derives from the verb daoimai, meaning to fate, to divide. Happiness therefore must be considered as good (ue) fate (daimon). According to the Greek, happiness is something that depends on man himself, it is assigned to him, not at his disposal.

The first appearance of this word is in Hesiod, according to whom daimones are divine spirits that turn into eu-daimones as patrons of men. Daimones are the keepers of men and shelter them from evil. Eudaimon is, thus, he who enjoys the gods' favour. In current words, happy are those who enjoy the benefits of fortune, that is to say the lucky ones. But if men can be happy only when someone takes care of them, this means that their natural condition is that of being exposed to uncertainty. What clearly emerges from the Greek tradition is the idea that men's condition on earth is marked by deep uncertainty, apart from what they can or cannot do. For this reason their idea of happiness coincides with that of fortune, which is as much given as taken away in arbitrary fashion. Fate rules over men's life, and this is why happiness is fortune.

The Greeks' strong conviction in this sense is confirmed by another word they used to mean happiness: eutychia. Eutychia means both happiness and fortune. Its root, in fact, is the same as that of the verb tynchano, meaning to hit, to catch, which was the origin of tyche meaning fortune. This word identifies happiness with fortune much more than eudaimonia: happy, in fact, are those for whom fate or eu-tyche has been favourable.

European culture draws on the Greek concept of eudaimonia, as is proved by the words that in some European languages indicate happiness. In German happiness is translated by Glück, which also means fortune. Likewise, in English the root of the word happiness derives from the verb to happen, which means to take place. Thus happiness is something we come upon, something that happens, and since it has no guarantees, it disappears. The idea of happiness is therefore strictly linked to that of uncertainty, to the precariousness characterizing human life. Happiness depends on the game of fate and therefore it is fortune because of its randomness.

The definition of happiness given by Salvatore Natoli (1994) incorporates the idea of precariousness: "It happens to be happy. Thus happiness is a fact, in particular a feeling, a state of mind". Men attain to happiness but only for a moment, they cannot keep it. In this sense, according to Natoli, happiness is only fate and, as such, it is as changing as fortune.

When he defines happiness as a state of mind, Natoli underlines how when experiencing happiness, in the very moment when we feel happy, we experience our greatness. The Greek word mákar, which means happiness, has a root, mak, connected to mégas, meaning great. He who is happy is great because he enjoys unlimited self-expansion, that is to say in that moment the obstacles of his life are temporarily ignored. According to Homer this kind of life with no worries and no obstacles, where everything flows in a quiet and unlimited way, belongs only to the gods and the dead. The word makaria, translated into Italian as bliss, exactly indicates this state of happiness, which knows no interruptions. The attribution of makaria to the gods and the dead on the one hand underlines the precariousness of human happiness, on the other hand it indicates that when men feel happy they feel divine.

A feature of the sensation of happiness is, according to Natoli (1994), that of perfect harmony between ourselves and the universe around us: nature, things and others beings. In this sense happiness represents enchantment. In the Christian tradition this idea is present in the image

of Jesus, as described in St. Matthew's Gospel, who climbs a mountain with his disciples and becomes transfigured, his face shining like the sun, his clothes becoming as pure white as light.

The same condition is described by the German word *Stimmung*, which indicates an intimate harmony of the soul with itself and with the world. Therefore it does not deal with a changing and dynamic condition but with a steady harmony of the soul. The word *Stimmung* derives from the translation of the Latin words *consonantia* or *concordia*, meaning a harmonious mood. The perfect harmony of the soul with itself and with the natural and human world outside represents happiness, meant as *serenitas* or tranquillity, therefore as transparency between the outer world and ourselves.

Another, different concept is that of bliss, felicity. There is a difference between happiness and bliss. While happiness is momentary, bliss is something emerging from the human soul thanks to union with God. If you feel separate from God you cannot experience bliss. St. Thomas stated that bliss, perfect happiness, should represent the real and ultimate aim in human life, a chance all individuals had but that not everyone was able to use. The intellectual contemplation of God would lead to the achievement of such an aim.

The sense of divine that men feel in the moment of happiness is described also by Leopardi as an unlimited expansion. He describes the dynamic of happiness in these terms: "If man could feel in an infinite way, any kind of sensation as long as it were not unpleasant, he would be happy in that moment because his sensation would be so alive and life itself is pleasant to man, whoever he is. Thus man would in that moment feel an infinite pleasure, and that sensation, although however indifferent, would be an infinite pleasure and therefore perfect, thus man would be pleased and therefore happy" (Leopardi 1969). It happens to men to be happy and this happens every time they perceive an unlimited self-expansion. Such a sensation of overflowing outside oneself is present in the meaning of the word *felicità*, whose root, *fe*, derives from the Latin *felicitas*. It is an Indo-European root from which the Greek *the*, meaning prosperity and fecundity, derives.

Another synonym of the word happiness is the word *laetitia*, where the concept of expansion is expressed once again. *Laetitia*, in fact, derives from the verb *laeto*, meaning to make fat, to fertilize. In Western culture the idea of happiness often makes use of the metaphor of fecundity not only to indicate the expansion of the individual but also the extension of his relational abilities to the environment. Fear and an excess of guarantee, in fact, would lead to a reduction of people's willingness.

The concept of full self-expansion is already present in Aristotle; according to him happiness consisted in the fulfilment of human nature in all its dimensions. In particular, unlike the previous Greek belief tending to associate the concept of happiness with that of pleasure, Aristotle has a more balanced position. Men must enjoy good health in order to be happy, they must not be in a state of poverty and they must have friends. Moreover, with Aristotle and Plato dissociation between happiness and fortune through virtue is realized. A happy life, in fact, is the outcome of a virtuous life, one where all virtues are cultivated, especially the civil ones. However, virtue and ethics are not seen in a moral sense, but in the sense of action, activity, as the ancient root of *aretè*, *ar*, from which both art and virtue derive, testifies. The word *eudaimonia* in this phase takes on new meanings and the idea that man can be happy with his choices and his freedom becomes widespread.

Amartya Sen and Martha Nussbaum have drawn on the Aristotelian meaning of *eudaimonia* using the translation "human flourishing" rather than happiness. According to Sen happiness does not depend on income but on the implementation of abilities, connected to needs and opportunities. Thus *eudaimonia* should lead to a pluralistic development, since there is a plurality of aims and objectives that men can pursue. Unlike Aristotle, who had created a "list" of universally acknowledged operations, neglecting the individual, Sen states that since the objectives each individual can legally pursue are manifold, abilities are also a plurality.

Finally, another definition of happiness is that given by psychologists. As indicated by Diener (1984) happiness is the colloquial term employed to define the good life, that has come to be called "subjective well-being" (SWB). SWB refers to people's evaluations of their lives, evaluations that are both affective and cognitive. People experience abundant SWB when they feel many

pleasant and few unpleasant emotions, when they are engaged in interesting activities, when they experience many pleasures and few pains, and when they are satisfied with their lives. There are additional aspects of a valuable life and of mental health, but the field of SWB focuses on people's own evaluations of their lives. SWB is defined in terms of the internal experience of the respondent and is measured from the individual's own perspective. Finally, SWB focuses on longer-term states, not just momentary moods. Often what leads to happiness at a given moment may not be the same as what produces long-term SWB.

3. Conceptual referent theories

The psychological perspective is just one way to study happiness. Other disciplines, such as politics, economics, philosophy, have their definitions of happiness¹. Following the seminal paper of Rojas (2005) on Conceptual Referent Theory (CRT), we consider four basic theories of happiness, which have been formulated over time: hedonism – utilitarianism, the desire theories, the objective list theories and the life satisfaction theories.

According to the Hedonists, well-being consists of the predominance of pleasure over pain. Feelings of pleasure or happiness are the final aim of conduct. So every action that brings pleasure is right. Pleasure is the enjoyment of goods that provide comfort; it is the satisfaction of all human needs and wants. The simplest version of a desire theory is the present desire theory, according to which someone is made better off to the extent that his current desires are fulfilled. What matters to a person's well-being is the overall level of desire-satisfaction in his life as a whole. This theory suggests that the more desire-fulfilment in a life, the better.

Objective list theories are usually understood as theories that list items constituting well-being that consist neither merely in pleasurable experience nor in desire-satisfaction. Happiness resides outside feeling and within the truly valuable things in the real world. It holds that happiness consists of a human life that achieves certain things from a list of worthwhile pursuits, such as career accomplishments, friendship, freedom from disease and pain, material comforts, civic spirit, beauty, education, love, knowledge, and good conscience.

Life satisfaction theories assume that satisfaction in life consists of having a favourable attitude towards one's existence as a whole. It is intended as something embodying a global judgement about one's life taken as a whole: all things considered, one's life is satisfactory. Central to life satisfaction for Sumner (1996) is “ a positive evaluation of the conditions of your life, a judgement that yields a positive result by comparing your actual conditions with your standards and expectations”.

Besides this traditional classification, there are other conceptions of happiness that can be inferred from the different meanings the word happiness has been given over time. In the Greek tradition the word used is eudaimonia, which is translated either as fortune or happiness. So happiness is something that happens to human beings, not at their disposal. This interpretation of the word happiness is strictly linked to uncertainty, because happiness is something in which men come upon and it can easily disappear.

With Aristotle and Plato dissociation between happiness and fortune through virtue is realized. A happy life, in fact, is the outcome of a virtuous life, one where all virtues are cultivated, especially the civil ones. Virtue is now interpreted in the sense of action, activity. The word eudaimonia has new meanings and the idea that men can be happy with their choices and freedom becomes widespread.

A different approach is that of the Stoics and Cynics, for whom happiness is to accept our own fate, adapting our desires and expectations to what happens. It depends on human beings to be happy with life. The way to attain happiness is to reach self-sufficiency. It is abstinence that leads to independence, the most valuable good.

¹ For a complete description of conceptual theories on happiness see Rodriguez (2001)

Another conception of happiness is that of many religions, according to which happiness is the feeling of perfect harmony between men and the universe around. It is an intimate state of the soul, a sense of tranquillity and serenitas. A different concept is that of bliss, felicity. Bliss is something that emerges from the human soul, thanks to the union with God. This is what St. Thomas considers perfect happiness, the real ultimate goal of human life. Happiness as a sense of the divine is also described by Leopardi, who states that in the moment of happiness men expand themselves without limits. This concept of unlimited expansion is also present in the word *laetitia*.

In Table 1 all the definitions and concepts of happiness suggested above are summarized. While Stoicism, Virtue, Hedonism, Tranquillity, Life Satisfaction and Realization have a clear philosophical referent (Rojas 2005), for the other meanings of happiness, such as fortune, harmony, bliss and *laetitia*, we use definitions considered useful to our purpose. Fortune can be thought of as a way to reach happiness independently from the human will, while bliss, harmony and *laetitia* represent a state of mind that generates happiness.

3.1. Objective and subjective dimensions of happiness in different philosophical theories

Using the definitions and concepts defined in the above paragraph, we attempt to divide the different theories of happiness into two categories: those based on the hypothesis of the existence of happiness producing external entities (OUTER oriented), and those based on the hypothesis of an endogenous process of internal bliss (INNER oriented). This exercise is necessary in order to verify which are the determinants of happiness for the two groups of definitions. The division follows the work of Rojas (2005), according to which in the first group of theories happiness is the result of an external stimulus. Material goods and human activities have thus an important role in an individual's life. The interior process, on the contrary, implies that happiness stems from feelings that originate and persist endogenously within the minds of human beings. According to these theories, happiness can be for example the result of feeling in union with God, or of a serene indifference towards the material world, or a state of harmony with the universe.

There are different implications to be drawn from these two polar ideas of happiness: in the first case happiness can be considered like satisfaction of needs, so it is useful to try to identify basic human urges and facilitate their fulfilment. In the second situation feelings of happiness can be determined by inducing or manipulating the appropriate states of mind, by altering beliefs, or even thanks to medicines, drugs and other external agents.

Hedonism is a way of life in which pleasure plays an important role. Pleasure stems from the fulfilment of all human beings' desires and needs. Utilitarianism and materialism have their fundamentals in Hedonism. In this way of thinking what matters is "to have something" and not "to be something". From these concepts of happiness, it is possible to argue that they are objects that produce happiness, an external stimulus. This idea of happiness coincides with utility, which Bentham defined as the tendency of an object or action to increase or decrease overall happiness (OUTER).

The Epicureans thought that what is important is to choose pleasures that do not entail pain. According to Epicure, happiness is the state of the soul in which there are no worries. This doctrine identifies pleasure with the absence of pain, and happiness with the tranquillity of the soul. External conditions could play a role in reducing pain and affliction, however the Epicureans emphasize prudence and moderation. The inner attitude prevails in this doctrine, even if external conditions are not completely ignored (INNER).

According to the Stoics and Cynics, happiness is to accept our own fate, adapting our desires and expectations to what happens. The way to reach happiness is to be self-sufficient. It is renunciation that leads to independence, the most valuable good. The difference between the Cynics and the Stoics is their approach with respect to the material world: the former think of the material world with scorn, while the latter behave with indifference. These two schools of thought are different from hedonism and utilitarianism, because attention is displaced inside men. Now it is human beings by their conduct that generate happiness, it is no longer a process induced by an external stimulus (INNER).

These same conclusions can be attained with the Socratic school, according to which happiness lies in virtue, in acting well and not in exterior goods. Attention is now turned to the knowledge of the human soul, and not to the outside world (INNER).

In the ethic of Plato little importance is attached to the material world. The real world is that of ideas. Happiness is the highest good to which human actions and desires must aspire. This absolute good is God, and a total plenitude can be reached only after dying, even if human beings must aspire to happiness during life. The way to reach happiness can be found, according to Plato, by practising the four virtues: power, wisdom justice and temperance.

In the doctrines of the Stoics, the Cynics, Socrates and Plato, the source of happiness does not lie in exterior goods. The resources to attain happiness are inside men, and they take different forms such as independence from the material world (Stoics and Cynics), or behaving according to virtue (Socrates and Plato). A different conclusion can be reached from Aristotle's philosophy. Aristotle, like Plato, states that happiness is plenitude, and all human life should pursue happiness. The way to reach it is virtue. However, it can be attained even during life, not only after death. What makes Aristotle different from previous philosophers is that he does not think that happiness consists of the satisfaction of one's desires. Happiness is a deep satisfaction that stems from adhering to our own essence. Virtue is the way to realize full human essence: virtue in practical life and virtue in contemplative life (Sophia). The highest happiness is the result of intellectual contemplation (INNER).

According to Sen, happiness or the fulfilment of desire represents only one aspect of human existence, and there are many other things of intrinsic value (notably rights and positive freedoms) that are neglected by the welfare approach. Sen affirms that neither wealth (income, commodities), nor utility (happiness, desire fulfilment) are able to describe human well-being. Another approach, based on human functionings and capabilities, is necessary. We can argue that happiness resides outside feeling; it is possible to reach satisfaction through a list of truly valuable things in the real world. Happiness thus consists of a human life with certain important achievements, such as career accomplishment, friendship, freedom from disease and pain, material comforts, civic spirit, beauty, education, love, knowledge, and a good conscience (OUTER).

The moral of Cartesian philosophy has its roots in the doctrine of the Aristotelians and Stoics. The main exponents are Descartes, Spinoza, and Leibniz. Descartes' philosophy is based on two principles: rationalism and idealism. The interesting aspect of Descartes' idea of happiness is that he points out the double existence of willingness and desire. Happiness does not stem from external things or from pleasures stemming from objects. On the contrary, it is something spiritual which comes from the control, through willingness, of passions. Satisfaction arising from virtue and having an emotional content, this is what can be called happiness. Happiness is the free disposal of willingness. According to Spinoza, desire is the essence of human being, and it represents also its power. The positive action of desire is reached through reason. The ability to reason alone is not sufficient for realizing free actions, but desire is the instrument that allows the attainment of happiness. Leibniz's idea of happiness is, instead, that of progress towards a higher good. It is a process, not a final good to be attained. With happiness there is always a desire or a sense of worry, uneasiness. This worry is essential to reach happiness (INNER).

The Patristic and Scholastic thoughts are characterized by the religious nature of all the questions discussed. The main innovation brought by Christians is that of creation. The chief exponent of the Scholastics was S. Augustine of Hippo, who based his theories on Plato's principles. He identified the Absolute stated by Plato with God, who has the will and power to create. Moreover he thinks that human beings, because of original sin who makes them bad, will never reach happiness. St. Thomas, the main exponent of Scholastic philosophy, on the contrary thinks that human beings cannot be happy without obtaining something able to satisfy all their aspirations towards happiness. This good can only be God, who contains all good. So God is the supreme happiness of man. A moral code is the instrument by which to reach God. Happiness now is not the centre of attention. The final objective aim of human beings is God, the final subjective aim of individuals is happiness, but it can be obtained only as a consequence of reaching God. Bliss, perfect happiness, is born of the human soul thanks to its union with God. For this concept of

happiness it is possible to identify only an interior process, given by a moral code, which leads to happiness. There are no external goods that influence this process (INNER).

The sense of the divine that men feel in the moment of happiness is described also by Leopardi as an unlimited expansion. Human beings feel in that moment an infinite pleasure. This feeling is also well expressed by the word *laetitia*. (INNER)

Harmony indicates an intimate feeling of being in accord with oneself and with the world. Therefore it does not deal with a changing and dynamic condition but with a steady intonation of the soul. This perfect harmony of the soul with oneself and the world outside represents happiness, meant as *serenitas* or tranquillity, therefore as transparency between the outer world and ourselves. It is an interior process. (INNER).

Fortune is neither an interior process nor an exterior stimulus. It is something out of the control of human beings, so it cannot be classified in those two main groups.

4. The questionnaire design

4.1 Configuration of the questionnaire

The questionnaire includes sections relative to: personal data (age, sex, civil status, education, income, distribution of income, family status, number of children); risk aversion; employment; social capital, relational goods; altruism, perceived inflation and unemployment rate; quality of public services. In addition to several socio-economic characteristics of the respondent, the questionnaire asks also, on a five-point scale, the perceived level of happiness and, on a ten-point scale, the level of life satisfaction. There are also nine definitions of happiness and two questions about happiness as events or desires. The survey is applied to a random sample of the Italian population, which represent our statistical universe.

4.2 Basic hypotheses and expected contribution of the survey

The purpose of the survey is twofold: first we look for the determinants of happiness, testing the hypothesis already existing in literature. Then, following the conceptual referent theory of happiness (CRT) of Rojas (2005), we focus on some concepts of happiness (fortune, pleasure, virtue, bliss, *laetitia*, tranquillity, harmony, life satisfaction, self-realization and human flourishing and the practice of virtue), and we try to understand which are the concepts that people share. We divide the different theories of happiness into two categories: those based on the hypothesis of the existence of happiness producing external entities, and those based on the hypothesis of an endogenous process of internal bliss. Besides these two groups of definitions of happiness, we formulate two questions about happiness as desires and important events in life. Desires can be grouped into the wish for material objects (money, a house), desire for more free time, or satisfaction with what one has obtained in life. We do the same for events: to buy a house is considered an objective event, to take a degree or to overcome a difficulty is considered a personal achievement, and to marry and have children is thought of as a relational event. For people choosing different events or desires, we try to identify which are the determinants of happiness and satisfaction.

There is a huge literature on the determinants of happiness. In particular the main hypotheses which are verified are those relative to socio-demographic factors, such as age, gender, marital status, religion and education; economic factors, such as income, unemployment and inflation; interpersonal relations with work colleagues, relatives and friends; social capital and altruism.

Besides the factors already analyzed in literature, we introduce some new independent variables we think could be relevant in explaining happiness. They are: risk aversion, perceived annual rate of inflation and unemployment, perceived quality of public services in the city of

residence. A person who has no love of risk, or who perceives a high rate of inflation and unemployment, is probably more anxious and less happy or satisfied. Concerning the variable relative to the quality of public services, we observe that a higher quality increases the quality of life, the level of happiness and satisfaction.

Age and happiness

According to Harris (1977), the first part of life is considered the best period of one's existence. As time passes, people lose several things, and this determines a declining level of happiness. However, some empirical works show a weak relation between happiness and age (Veenhoven 2004). Cantril (1965), for example, find that life satisfaction increases with age. Frey and Stutzer (2002) identify four reasons to explain this positive relationship: the lower level of expectations and aspirations of older people; the reduced difference between goals achieved and initial objectives; older people have adjusted their working conditions to their needs; they are more able to cope with difficulties and negative events. According to Oswald (1997) and Blanchflower and Oswald (2000), it seems there exists a U-shaped relationship between age and happiness. While it is high during adolescence and declines at 30, it starts to rise again when people retire. We introduce age as an explanatory variable in order to verify if there is this U-shaped relationship between happiness and age.

Gender and happiness

Another explanatory variable widely considered in literature is gender. According to some works of psychologists (Inglehart 1990, White 1992), women show higher self-reported happiness than men, even if the difference is small. Contrary to this evidence are the findings of Kessler et al. (1994). In their work they show that women present higher rates for states of mental disorder with respect to men. Another difference between women and men is that women on average experience both more extreme positive and negative emotions than men do. This diversity in the intensity of feelings seems to explain why women appear to be happier than men. This characteristic of women can be justified by the different social roles. Women are allowed to be more emotional than men (Wood, Rhodes and Whelan 1989).

There are two other explanations for the greater happiness of women: their higher genetic capacity to experience happiness and their lower aspiration level. It seems that women are educated to expect less in life or to be satisfied with less. Empirical works from economists seem to confirm the evidence of psychologists that women are happier than men. In a study of Blanchflower and Oswald (2000) however, it emerges that American women experienced a decline in well-being during the period 1970-1990. This result appears to be in contrast with the reduction of discriminations against women and their greater participation in working life. What can be argued is that the level of aspirations of women rose in this period thanks to the equality they had reached, and this made women less satisfied with the same life circumstances they had experienced earlier.

We introduce in our survey a question about sex of respondent in order to verify what is the impact of gender on happiness and satisfaction and check if women are happier than men or not.

Religion

General surveys reveal a definite, though weak, relation between religion and happiness (Frey and Stutzer 2002, Argyle 2001). It seems that the causation is from religion to happiness, because happy people are not expected to need religion, while the reverse appears more likely.

According to Gartner et al.(1991), religion is associated with mental health benefits, especially when religiousness is measured by actual religious behaviour. Religion may provide both psychological and social benefits. Religious experiences can provide a sense of meaning in daily life (Pollner 1989) as well as during major life crises. As Durkheim (1915) notes, religion also serves social purposes by offering a collective identity and reliable social networks consisting of individuals who share similar attitudes and values (Taylor and Chatters 1988). Indeed the benefits of church membership are greater for people who have lost other forms of social support, suggesting that the benefits of religion may be the result of increased social support (Moberg and Taves 1965). Ellison (1991) suggests that one of the benefits of religion is offering an interpretative

framework by which one can make sense of his or her experiences. In contrast, religion cannot eliminate negative events or even enhance positive events and therefore may not affect emotional well-being. Religion may increase feelings of control and security.

There is however the possibility of reverse causality: happier people are more religious. This is particularly true in societies in which religion plays a prominent social role and where participation in church is positively regarded.

The information obtained in our survey on religion is relative to the importance of religion in life and the frequency of time spent in religious activities (participation in religious services or meeting people in religious places). We try to verify what the relationship between happiness and religions is, considering two groups of people: people for whom religion is very or quite important, and people for whom religion is not very important and completely unimportant.

Education

In studies made by psychologists a small but significant correlation between education and subjective well-being (SWB) has always been found (Cantril 1965, Campbell et al. 1976; Diener et al. 1993). Education is shown to be highly correlated to well-being for individuals with lower incomes (Campbell 1981, Diener et al. 1993).

The weak relationship between education and happiness is due to the covariation of education with income and occupational status (Campbell 1981, Witter et al. 1984). That education may be only indirectly related to well-being is supported by the studies showing that education and SWB becomes not significant or even negative when the effects of income are controlled (Campbell et al. 1976, Diener et al. 1993). Similar findings are obtained when occupational status is considered. When Witter et al. (1984) control occupational status in their meta-analysis, they find that the average effect size drops from 0.13 to 0.06. Thus much of the relationship between education and SWB is due to the correlation of education with occupational status and income.

Education may also have indirect effects on SWB. Education allows people to reach their goals or to better adapt to the changes in the world around them. On the other hand, education may raise aspirations. As shown by Clark and Oswald (1994), highly educated people suffer more when unemployed with respect to less educated people. Being out of work may be more aversive to the former group because of their higher expectations. Thus education may interfere with SWB if it leads to expectations that cannot be met.

We ask in our survey the level of education attained and introduce it as explanatory variable in our regression analysis.

Marriage and happiness

Interpersonal relationships are extremely important in people's life. One of the main objectives of people is to have a stable and enduring relationship. Marriage and family represent the most important form of interpersonal relationship. A study of Denier et al. (2000) shows that marriage raises happiness, and married persons report greater subjective well-being than persons who have never married, divorced or separated. Married women and men are seen to be happier than unmarried ones.

Another result, which confirms these findings, is that emerging from the work of Lee et al (1991), which shows that marriage brings advantages in terms of mortality, morbidity and mental health. Even economic studies have found that happiness and marriage are positively related. Di Tella et al. (2001) find that in both Europe and the USA the divorced are much less content. Marriage and high income, by contrast, are associated with high well-being scores. There are two explanations as to why marriage contributes to well-being: it provides a source of self-esteem and, secondly, married people suffer less from loneliness.

In recent years however the difference in happiness between married and unmarried persons has been decreasing because either those who never married are happier or those who are married have been experiencing decreasing happiness (Lee et al 1991). This result is in line with the increasing number of divorces, a lower number of marriages and the rising number of unmarried partners, even those with children.

Besides marriage, we consider the presence of children in the family. According to Veenhoven (1994), the overall effect of having children on parents' happiness is zero. An opposite result has been found in the work of Hoffman and Manis (1982). The authors state that children are a source of several benefits for parents, including affection, fun, help and later economic help in emergencies. However children are also a source of stress to their parents at two stages, when they are babies and when they are adolescents (Argyle 2001). Umberson (1987) find that having adolescent children is a source of stress to their mothers, which is partly offset by spouse support. On the other hand, couples with children live longer, so it looks as if having children may be good for health (Kobrin and Hendershot 1977).

We introduce both a dummy variable for the marital status and a variable for the number of children, in order to take account of their contribution in explaining happiness and satisfaction. In particular, we check if people having children show a higher level of happiness and satisfaction respect to those who do not have them.

Relational goods and happiness

A hypothesis we try to verify is the relation between happiness and relational time. Social relationships have a powerful effect on happiness and other aspects of well-being, and are perhaps their greatest single cause. Friendship is one of the types of relationships that are most relevant.

Classical microeconomic foundations of an individual's utility usually ignore the fact that utility does not depend only on the goods people consume, but that there is an influence of the relational context in which material goods are consumed. Several times the effect of the relational context on utility dominates by far that of the consumed material goods. (Becchetti, Bedoya and Trovato 2006). According to Gui (2002) relational goods are local public goods, which are co-produced and co-consumed by agents during their economic transactions. Bruni and Stanca (2006) argue that personality and absence of instrumental motivation are key elements affecting the quality of relational goods.

There are several empirical works that analyze the relationship between time spent on relational goods and happiness. One of the paths explored is the effect of friendship on happiness. Being with friends, as indicated by Argyle (1987), is a major source of joy. This result is confirmed by a study carried out by Larson (1990) in which subjects are beeped on random occasions and asked to report on their mood. This shows that they are in the most positive mood when with friends, secondly when spending some time in their family, and finally when they are alone. The benefits of being with friends may be due partly to the enjoyable things they do together. These things such as dancing, playing tennis, drinking, going for a walk, may be the source of a great deal of joy and can be a part of supportive relationships. Costa et al (1985) find a factor of the quality and quantity of friendships, which correlates .29 with happiness. Friends produce happiness according to the frequency of enjoyable contacts with them. Weiss (1973) find that either close friends or a network of relationships are important to avoid loneliness. Forming a close relationship involves an increasing level of self-disclosure, because without it people will still continue to be lonely.

In our survey we ask the level of importance of friendship in life, and the frequency of these social relations. We then try to verify the effects of friendships and social relations on satisfaction and happiness.

Social capital, altruism and happiness

Social capital is represented by participation in social networks and in social activities. Attention to social capital is due to several reasons: people with a larger social network and many alternative uses of their time might not be as much exposed as others to the adverse psychological mechanism of unemployment documented in Goldsmith, Veum and Darity (1996a, 1996b); social activities have in general an immediate effect on positive affect. Church services, for example, have this effect (Argyle 2001). Sports activities are good for mental health, especially depression, just as are social clubs and religious attendance. Health benefits are produced by sport and exercise, by attending social clubs and religious places. These positive effects are due partly to the social content of these activities, partly to better health behaviour.

In the sphere of sociability there is also altruism and willingness to help people. Happy people are found to be more interested in other persons, especially those with social problems, less with their personal problems or inner world (Argyle 2001). An explanation is that happy people may know that helping is rewarding and they want to maintain their positive mood (Isen and Simmonds 1978).

The survey contains questions about the weekly frequency of social activities and one question about altruism. Using dummy variables for each one of these activities and altruism, we check their effect on happiness and satisfaction.

Unemployment and happiness

A large amount of literature exists on the relationship between happiness and employment. To be unemployed is considered by most economists a difficult and unfortunate situation. In Di Tella et al. (2001) there is evidence confirming the idea that unemployment is a major economic source of human distress. Some people, however, can choose to be unemployed because their wage paid can be unattractive with respect to the benefits of the social security system. It can be possible that not all unemployed people are suffering. Because the issue as to whether unemployed people are suffering or not is still unresolved, happiness research on unemployment is particularly important.

As indicated by Winkelmann and Winkelmann (1998), the costs of unemployment are not only those derived from loss of income, but there is an additional burden called the non-pecuniary cost of unemployment. These indirect costs are represented by the lower self-esteem of individuals, the loss of social relationships and identity in society (Jahoda 1982). From the individual point of view, unemployment affects every aspect of happiness, including positive affect, life satisfaction and negative affect (Darity and Goldsmith 1996). These non-pecuniary costs seem to exceed the pecuniary costs by far. They are clearly analyzed by several empirical works. Di Tella, MacCulloch and Oswald (2001) find that the self-proclaimed happiness of unemployed people is much lower than that of employed persons with similar characteristics. In a work by Frey and Stutzer (2002), the authors reach the same result.

Beside personal effects, there are general effects caused by unemployment. People may feel bad about unemployment even when other persons are losing their jobs. They can be afraid to lose their job in the future, or they can be scared of the repercussions on the economy and society as a whole. There could be consequences such as rising payments for social security contributions and taxes, rising crime and social tensions and threats of violent protests. Di Tella et al. (2001) find that a one percentage point increase in the general rate of unemployment reduces life satisfaction by 0.028 units on the four point scale applied. This effect is considerable: it implies a shift downwards of more than 2 percent of the population from one life satisfaction category to another.

In the survey we ask what is the current working condition (employed, retired, self-employed or unemployed) of respondents. We codify the answers as a dummy variable in order to control if the person is employed or not and then we check if the working conditions produce an effect on happiness and satisfaction.

Income

A large number of economists think that higher income leads to higher happiness. There is a reasonable explanation for this conclusion: a higher income expands individuals' and countries' opportunity set. Psychologists are not so confident that higher income leads to higher happiness. In studies made on people who won the state lottery (Brickman et al. 1978), the winners of the previous years had reported only a slightly higher level of satisfaction with respect to the control group, and were less happy with everyday events. Even some economists do not share the idea that higher income produces higher happiness. Galbraith (1958) points out the limited use of higher private income while the public sector is starving. Easterlin (1974), Scitovsky (1976) and Frank (1999) have argued that increasing income and consumption do not bring happiness.

Researchers have examined the relation between income and happiness in four lines of research: within-country relations between income and happiness; changes in happiness among individuals who experience increases or decreases in income; trends in happiness during a period of national economic growth; between-countries relations of average happiness and national wealth.

From the first point of view, within-country relations, people who live in the same country and have different incomes are compared at a certain moment. It would seem that people with higher incomes have more opportunities to buy goods and services and that they have a higher status in society. Considerable empirical evidence shows the result that happiness and income are positively related. Easterlin (2000) and Di Tella et al. (1999) find that there is a positive correlation between happiness and income. Differences in income, however, explain only a small part of differences in happiness among people. In regressions which take into account factors other than income that influence happiness, such as age, gender, education, there is seen to be a positive effect on happiness, but of a smaller size. The explanations existing on why higher income does not lead to higher happiness are different. One is that people compare themselves with other persons. A second reason is that what matters is not the absolute level of income, but the position a person has with respect to others. (Becker 1974, Frank 1985, Pollak 1976).

Considering the relation between income and happiness among countries, from a study of Inkeles and Diamond (1986), it emerges that there is a rise in personal satisfaction with the level of economic development of the nation. The relation between the wealth of a nation and average happiness is clearly positive and strong. This result can also be seen in an extensive study covering 55 nations by Denier et al. (1995), using both GNP and purchasing power as indicators of national financial status. The positive correlation between income and happiness may be due to other factors than income. Rich countries tend to be more democratic and egalitarian than poorer nations. Thus the relation between income and happiness may be due to the more developed democratic conditions.

The relation between happiness and income over time has been the subject of several studies (Blanchflower and Oswald 2000, Lane 1998, Myers 2000, Easterlin 2000b, Lebergott 1993). In particular, it can be seen that per capita income has risen in the USA in recent decades, but the percentage of people considering themselves very happy has fallen during the same period. This evidence contradicts the conclusion that people in richer countries are happier. One explanation is that the meaning of happiness has changed over time. Maybe 50 years ago people were more inclined to state that they were very happy, though their subjective well-being had not changed much or was even lower than now. Another reason is provided by the fact that people adjust to past experiences. A rise in income initially provides a surge of satisfaction, but afterwards people get used to it, and they are not happier than before.

In our survey we collect data about the annual level of income of respondents and we use this information to check for its influence in determining happiness and satisfaction, for the whole sample and for each concept of happiness. We look for the existence of the positive relationship between happiness and satisfaction till to a certain level of income, after of which it becomes constant.

5. The new Database: some preliminary results

Before running the econometric analysis, we want to describe the data collected through the questionnaires. As underlined before, we prepared a survey with more than 40 questions, aimed at collecting personal data, socio-economic data, perceived level of happiness and satisfaction. We also introduced definitions of happiness and two questions about desires and events. We collected 197 surveys from a random sample of the Italian population. We are aware that the sample should be broadened, and this is one way in which this work will be improved.

A first general result is that 59% of people interviewed replied that they were “quite happy”, while the second most frequent answer was “not very happy” (18%) and 13% of respondents answered “Very happy” (table 1 and graph 1). We obtained a similar result for satisfaction: 56,85% of these interviewed answered that they were “quite satisfied”, while 36% stated they were “very satisfied” and 6,6% chose “not satisfied” (table 2 and graph 2).

Besides the overall level of happiness and satisfaction, we asked people which were the main sources of happiness from among the following aspects of life: family, health, job, friendship and free time. The two most important sources of happiness were family and health (table 3), while friendship and jobs were third. Free time was fourth and fifth as a source font of happiness in life.

Looking then at the sex distribution of the sample (table 5), it reflects the current composition of the Italian population (ISTAT 2007). Thanks to this feature of the sample, it is possible to consider the joint distribution of the level of happiness and sex. It emerges that women have chosen the answer “Very Happy” more than men (15,69% and 10,53% respectively) . This result is in line with psychologists’ and economists’ studies, according to which women experience both more extreme positive and negative feelings (Wood, Rhodes and Whelan 1989).

The distribution by age of our sample does not reflect the real composition of the Italian population (table 6). In particular in the sample there are too many middle-aged persons (20-29 and 30-39 years old) and too few old persons (especially people over 60). For this reason it is impossible to draw a general conclusion from our survey. This represents another way in which this work can be improved.

Table 7 and graph 5 present the mean level of happiness and the standard deviation considering the marital status of respondents. The general findings in the literature are confirmed: the mean level of happiness of married people (2,75) is higher with respect to the mean level of the never married (2,73) and those separated, divorced or widowed (2,72). Table 8 and graph 6 show how people having children are happier (2,79) than persons who do not have them (2,74). This result is in line also with the answers we obtained in two other questions. As noted before, people consider their family the most important source of happiness (table 3); moreover when we asked the level of importance of social activities and relations, family is at the first place for the number of answers “very important” (table 4).

Results on working conditions are in line with many literature findings (Di Tella et al. 2001). Employed and self-employed people show a higher mean level of happiness and satisfaction respect to unemployed (table 9). Surprisingly, retired are even happier and more satisfied than employed and self-employed. A possible explanation for this result is the lower level of expectations and aspiration of retired. Graph 7 moreover shows how employed and self-employed persons answer more to be quite happy and very happy (61,7% and 14,7% respectively), respect to unemployed ones (50,5% and 10,6% respectively).

Another important variable is income. As shown in table 10, happiness and satisfaction raise as income increases (only for happiness see also graph 8). However, as we will see in paragraph 11, the increase in happiness will continue up to a certain level of income, after which it will become stationary. This confirm the idea that income does not entirely determine satisfaction in life. Then, by looking table 11 is also possible to understand how interviewed people employ their income. House represents the items that absorbs on average 26% of income, followed by food (18%), and travel and freetime (14%).

Respect to traditional economic literature on happiness, we introduce some new variables in our survey, such as monetary donations, we think can be significant in explaining happiness and satisfaction. table 12 shows how happiness and satisfaction raise as monetary donations increase.

Finally, table 13 and 14 shows respectively the most chosen definition of happiness and, among the positive answers of each persons, the most preferred one.

6. Methodology

The literature review presented above leads us to formulate our research questions more precisely. First, we try to check which are the determinants of happiness and satisfaction for the whole sample, introducing new variables not previously considered by the existing literature; secondly we verify which are the determinants of happiness for objective and subjective definitions of happiness, in order to understand if for people having an objective concept of happiness material things have a major role in determining it. Thirdly, we group people according to the nature of their desires and events, objective or subjective, in order to understand if the determinants of happiness are different in the two cases. Finally, we create a dummy variable for the level of happiness, in order to run a simple probit estimation.

To understand which are the variables able to explain happiness and satisfaction, we run an ordered probit estimation. What we try to measure, as correctly stated by Becchetti, Bedoya and Trovato (2006), and Guiso et al. (2003), are correlations across variables, without the possibility of establishing the size and the direction of causal effects. The single equation model we are going to estimate is the following:

$$\begin{aligned} CHAGH001_i = & \alpha_0 + \alpha_1 per002_i + \alpha_2 per004_i + \alpha_3 per005_i + \alpha_4 per0061_i + \alpha_5 per0062_i + \\ & + \alpha_6 per0063_i + \alpha_7 per008_i + \alpha_8 perln001_i + \alpha_9 wrk1_i + \alpha_{10} reg0021_i + \alpha_{11} reg0022_i + \alpha_{12} reg0023_i + \\ & + \alpha_{13} reg0024_i + \alpha_{14} reg0025_i + \alpha_{15} reg0026_i + \alpha_{17} alt001_i \end{aligned} \quad (1)$$

$$\begin{aligned} CHAGH001_i = & \alpha_0 + \alpha_1 per002_i + \alpha_2 per004_i + \alpha_3 per005_i + \alpha_4 per0061_i + \alpha_5 per0062_i + \\ & + \alpha_6 per0063_i + \alpha_7 per008_i + \alpha_8 perln001_i + \alpha_9 wrk1_i + \alpha_{10} reg0021_i + \alpha_{11} reg0022_i + \alpha_{12} reg0023_i + \\ & + \alpha_{13} reg0024_i + \alpha_{14} reg0025_i + \alpha_{15} reg0026_i + \alpha_{17} alt001_i + \alpha_{18} ex001_i + \alpha_{19} exi001_i + \alpha_{20} qpsg001_i + \\ & + \alpha_{21} rsk002_i \end{aligned} \quad (1a)$$

and the same we do for satisfaction:

$$\begin{aligned} CHAGS001_i = & \alpha_0 + \alpha_1 per002_i + \alpha_2 per004_i + \alpha_3 per005_i + \alpha_4 per0061_i + \alpha_5 per0062_i + \\ & + \alpha_6 per0063_i + \alpha_7 per008_i + \alpha_8 perln001_i + \alpha_9 wrk1_i + \alpha_{10} reg0021_i + \alpha_{11} reg0022_i + \alpha_{12} reg0023_i + \\ & + \alpha_{13} reg0024_i + \alpha_{14} reg0025_i + \alpha_{15} reg0026_i + \alpha_{17} alt001_i \end{aligned} \quad (2)$$

$$\begin{aligned}
CHAGS001_i = & \alpha_0 + \alpha_1 \text{perd002}_i + \alpha_2 \text{perd004}_i + \alpha_3 \text{perd005}_i + \alpha_4 \text{perd0061}_i + \alpha_5 \text{perd0062}_i + \\
& + \alpha_6 \text{perd0063}_i + \alpha_7 \text{perd008}_i + \alpha_8 \text{peri ln001}_i + \alpha_9 \text{wrk1}_i + \alpha_{10} \text{reg0021}_i + \alpha_{11} \text{reg0022}_i + \alpha_{12} \text{reg0023}_i + \\
& + \alpha_{13} \text{reg0024}_i + \alpha_{14} \text{reg0025}_i + \alpha_{15} \text{reg0026}_i + \alpha_{17} \text{alt001}_i + \alpha_{18} \text{exi001} + \alpha_{19} \text{exu001} + \alpha_{20} \text{qpsg001} + \\
& + \alpha_{21} \text{rsk002}
\end{aligned} \tag{2a}$$

where

CHAGH001_i is the assessment of personal happiness of person i,

CHAGS001 is the assessment of general satisfaction for life as a whole for person i

perd002_i is the age of person i,

perd004_i is the gender of person i,

perd005_i is the present marital status of person i,

perd0061_i is the level of education of person i, lower than high school

perd0062_i is the level of education of person i, high school education

perd0063_i is the level of education of person I, university and post university education

perd008_i is the number of children of person I,

perln001_i is the natural logarithm of annual income of person i

wrk1_i is the current working conditions of person i

reg0021_i is the weekly attendance of cultural events of person i,

reg0022_i is the weekly attendance of entertainment activities of person i,

reg0023_i is the weekly attendance of sports activities of person i

reg0024_i is the weekly meeting with friends and/or parents of person i

reg0025_i is the weekly attendance of volunteer activities of person i

reg0026_i is the weekly attendance of religious services of person i

alt001_i is the presence of donations made by person i

qpsg001_i is the quality of public services perceived by person i

rsk001_i is the risk aversion of person i

exi001_i is the perceived annual inflation rate of person i

exu001 is the perceived annual unemployment rate of person i

The reason for using an ordered probit estimation is the nature of ordered responses for both the dependent variables, level of happiness and satisfaction. table 17 describes how the variables used in the regression are codified.

7. Empirical results

Prior to running the ordered probit estimation, we check for collinearity among the set of independent variables. There is no collinearity. We also proceed with tests for omitted, redundant and non-significant variables. In table 18 we present some descriptive statistics for the variables employed.

As a first step we estimate equations (1) and (2) using only variables already analyzed in literature (table 19). Considering happiness first, as we use an ordered probit estimation, the meaning of the coefficients is the effect on the probability of receiving the best answer. With respect to the results emerging in literature, we find a lower number of significant explanatory variables.

The relation between income and happiness at a particular point in time and in a specific country, as widely indicated in the literature (Easterlin (2000) and DiTella et al.(1999)) is shown to be positive. This evidence is confirmed by graphs 1, 2. Both happiness and satisfaction are higher in the presence of a higher level of income. As noted by Frey and Stutzer (2002), income provides happiness at low levels of development, but once a certain level of income has been reached,

happiness does not increase. In our sample 34% of respondents are students, with a low income. For this reason we try to verify if the curvilinear relation between happiness and income is confirmed. To test this hypothesis we consider two groups of people: those with mean annual income lower than 15000 euro, and those with a higher income. We introduce a dummy variable, which takes value 0 for the first group and 1 otherwise. We find that the income is not significant, as indicated in table 20.

Results on marital status are in line with many literature findings (Becchetti, Bedoya Trovato 2006, Argyle 1999, Blanchflower and Oswald 2000, Frey Stutzer 2002, Inglehart 1990), which show a positive impact of marriage, and a negative effect of being divorced or separated. The dummy variable we introduce includes people living alone and also never married people. As indicated by Argyle and Furnham (1983), there are at least three factors of satisfaction in marriage: emotional satisfaction, which is realised through social support, intimacy and sex; instrumental satisfaction, represented by financial satisfaction and sharing of housework; satisfaction deriving from companionship in joint leisure. Moreover, the married are seen on average to be in much better mental and physical health than the different kinds of unmarried (Cochrane 1988, Smith and Hoklund 1988).

Another significant variable is working status. To be employed produces a positive effect in that people are in better mental and physical health when they have jobs. Job satisfaction has two components: increasing pay raises job satisfaction; to do a job which requires skills and autonomy determines a positive effect on happiness. To be employed presents others benefits such as: structuring time, providing social contacts outside the family; giving status and sense of identity; linking the individual to broader goals. Our results confirm these findings. The dummy variable we introduce, which takes value 1 when respondents have a job and 0 when unemployed or retired, presents a positive and significant coefficient.

Only two kinds of relational goods (volunteering and religious activities) present a positive impact on happiness, and the same effect is produced by altruism. This result confirms the evidence presented by Bruni and Stanca (2006), who find that participation in religious and charity organizations has a positive and significant effect on life satisfaction. In their work sport and art also generate a positive effect on satisfaction, while in our view they are not significant. For religious activities, we identify three reasons why religions should increase happiness: to be part of a religious group offers a sense of identity and a reliable social network; religions can offer a sense to daily life events and major crises; religions offer an interpretative framework through which to make sense of life experience. Participating in volunteer organizations makes one feel part of society, and useful to others. This feeling is a kind of reward for volunteering activities, as for altruism. To have social relationships also gives an opportunity to express one's personality. We attempt to substitute the single relational activities by a dummy variable taking value 1 if there is at least one of these activities during a week, 0 otherwise. This variable proves not significant and the overall estimation does not improve.

To have a university or post-university education determines a negative effect on the probability to be very happy. It is quite difficult to comment on this result, given the strong correlation between income and education. There is however an empirical work of Clark and Oswald (1996), in which the authors find that education has a clear negative effect, when income and occupation have been held constant. The explanation for this result is given by the fact that highly educated people have higher aspirations. In case of unemployment, for example, they suffer more with respect to less educated persons.

In our estimation the age variable produces a negative effect on the probability of being very happy. This result is due to the prevalence of people falling in the middle age groups compared to very young and very old persons. In economic literature, indeed, a U shaped relation between age and happiness is shown: younger and older persons are happier than the middle-aged group (Oswald 1997, Blanchflower and Oswald 2000). It is not possible to comment on the sex variable because in none of the regressions is it significant. However, in this case the sample is representative of the Italian population.

We run the same ordered probit regression also for satisfaction in life, according to equations (2) and (2a). The results are similar to those for happiness, with the exceptions of the level of education, altruism and attending religious activities that are not significant. Attending entertainment activities, on the contrary, is now significant.

Then we introduce new variables (risk aversion, expectation of inflation and unemployment, quality of general public services) in the ordered probit estimation, reaching the result described in table 21 both for happiness and satisfaction in global life. In the case of happiness, three out of four new variables are seen to be significant, but only risk aversion presents the sign we expect. To be risk averse produces a negative impact on the probability of being very happy, due to the higher level of anxiety. A rising level of perceived unemployment should, in our opinion, determine a lower level of happiness, but the sign is positive. The same is true for the perceived quality of public services: a higher perceived quality should determine a higher probability of being very happy, but the relation proves to be negative. For satisfaction in global life, risk aversion and the perceived level of unemployment are significant, but only the first of these presents the sign we expected. The introduction of new regressors has not improved the estimations: only risk aversion seems to have some explanatory power.

The second question we try to answer is what are the determinants of happiness for people having an objective or subjective concept of happiness. We run an ordered probit estimation using data for respondents who choose definitions 1, 2 and 3 as their preferred definitions of happiness. Then we do the same for people who choose definitions 4, 5, 6, 7 and 8 as their most fitting concept of happiness. The results are presented in table 22. The interesting outcome is that for the first group of definitions (1, 2 and 3), which have an objective nature, the level of income and the presence of a job are positive and significant explanatory variables. For inner concepts of happiness, on the contrary, these two variables are not significant, while to have children, certain relational goods, altruism and age are significant variables. The introduction of risk aversion, perceived inflation and unemployment and perceived quality of public services does not improve the regression (table 23). This outcome is interesting because if happiness is something related to the satisfaction of human needs and urges, then decisions of policy-makers will be oriented towards the external realization of human beings. On the contrary, if happiness is something which stems from states of mind, we can look at whether policy decisions have a role and in which directions.

The same analysis has also been carried out for satisfaction, with the results presented in table 24. Income and work are significant only for objective definitions of happiness. For subjective definitions, altruism and risk aversion are not significant, but the presence of children and volunteer work have an impact on the probability of being very happy, confirming their role in explaining satisfaction.

We then try to use the information on preferred answers in a different way too. We introduce a dummy variable taking value 1 when people choose as preferred answers definitions 1, 2, and 3 and 0 otherwise and it is introduced with the other independent variables. Then we create a new dummy for level of happiness, giving value 0 for the answers 1 and 2, and value 1 for answers 3 and 4. In this case we run a simple probit estimation, reaching the outcomes presented in table 25.

When the level of happiness is considered a dummy variable, the relevant result we get is represented by the significance of four out of six relational activities. Both meeting friends and doing sports activities have a positive impact on happiness. When we introduce a dummy variable for objective and subjective concepts of happiness, we find that this new variable is not significant. The regression as a whole does not improve.

We also run an ordered probit estimation for two sub samples: people having objective and subjective desires. This division is possible thanks to the exclusive answers people have given to this question. The results are those presented in table 26. Income is shown to be not significant in the case of subjective desires, while it is significant in the objective desires sample. The reverse outcome emerges for the presence of work. Even risk aversion is significant and with the right sign for both the regressions.

We run the same ordered probit estimation also for events, both objective and subjective. The only relevant result obtained is just that relative to happiness and subjective events: income is not significant.

What emerges from our analysis is that traditional variables analyzed in the literature (income, employment, marital status, education, altruism and relational goods) produce an effect on the probability of being very happy. This relationship is positive for income, employment, marital status, some relational goods and altruism, while it is negative for education and age. For the variable age this result is due to the composition of our sample, while for education there is a strong correlation with income. For the new variables which we thought could be important in explaining happiness and satisfaction only risk aversion has the right sign and is significant, while the perceived level of inflation and unemployment, and the perception of the quality of public services, do not have any significant role in the regressions.

The conclusion of Rojas (2005) is also confirmed: for people having an outer oriented concept of happiness, income matters, while it is not significant for persons who have an inner concept of happiness. This result is strengthened when one considers one question about desire: for people expressing objective desires, income matters, while it is not significant for persons expressing subjective desires.

8. Concluding remarks

We have investigated the relationship between happiness and satisfaction and various socio-economic variables, adding some new regressors not considered before in the economic literature (risk aversion, perceived level of inflation and unemployment, perceived quality of public services). We try also to understand which concepts of happiness people have, identifying nine definitions and concepts of happiness. In order to collect data from a random sample in the Italian population, we prepared a specific questionnaire. By using categorical measures of overall happiness and satisfaction and regression analysis by means of the ordered probit technique, we are able to estimate the effect on happiness and satisfaction of all the variables considered relevant. We use the same ordered probit estimation for two groups of definitions of happiness: objective and subjective ones. The same has been done for subjective and objective desires and events.

Our results are in line with theoretical predictions. Income, employment, marital status, some relational goods and altruism produce a positive effect on the probability of being very happy. Education and age, on the contrary, have a negative effect, due for the age variable to the prevalence of middle-aged persons in our sample, and for education to the strong correlation with income. The curvilinear relation between happiness and income also appears to be confirmed. An explanation of this result is given by the presence in our sample of several students, with a low income. A new piece of evidence we have obtained is that relative to risk aversion: people who are risk averse are less happy.

The results of Rojas (2005) are also confirmed. For people having objective concepts of happiness income and job are significant variables, while for persons who prefer subjective concepts of happiness income is not significant. This outcome emerges also when we consider people's preference for objective and subjective desires. In the first situation income is significant, while it is not in the second hypothesis.

In conclusion, it is important to note some limitations of the study. We propose nine definitions of happiness to respondents, and ask them to choose the preferred ones. There are two problems relating to this question: 1) it is quite difficult to divide concepts of happiness into objective and subjective ones; there are of course definitions which share both aspects; 2) people may have more than one concept of happiness. By imposing the choice of one preferred answer, we lose some information. There is the same problem with regard to desires.

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Table 1: Concepts of happiness

CONCEPTUAL REFERENT	REFERENCES	BRIEF DESCRIPTION
Fortune	Greek traditions	Happiness is to have a good fate. Happy are those who enjoy the benefits of fate
Stoicism	Marcus Aurelius, Epictetus	Happiness is a permanent state of contentment with life and with what happens in life. This state implies renunciation, austerity, acceptance; taking things as they are and as they come out.
Virtue	Socrates, Descartes	Happiness is a spiritual state produced by the feeling of acting properly, according to one's consciousness.
Hedonism	Aristippus of Cyrene, School of Epicurus Utilitarianism of Bentham, Mill, Hobbes, Hartley, Austin, Bain	Happiness is joyfulness and absence of pain, it is the enjoyment of those goods that provide comfort. It is the satisfaction of all human needs and wants.
Bliss, felicity	St. Thomas	Perfect happiness, bliss, and felicity emerge from the human soul thanks to the union with God.
Laetitia	Leopardi	Happiness is the unlimited expansion of human beings and the extension of their relational abilities to the environment.
Tranquillity	Epicurus, Diogenes, Adam Smith	Happiness is a state of tranquillity, the absence of worries that takes place by means of prudence, moderation, measurement, and judicious wants.
Harmony	Natoli, Religious traditions	Happiness is a state of the soul, a perfect intonation of human beings with the world around them, a Concordia.
Life satisfaction	Psychological approaches, Argyle, Sumner	Happiness is a feeling of life's elation which stems from a positive evaluation of the conditions of your life
Realization, human flourishing	Aristotle, Sen, Nussbaum	Happiness is the realization of our nature and the fulfilment of our essence as human beings.

Source: Rojas (2005) and Tenaglia for fortune, bliss, laetitia and harmony.

Table 2: Level of happiness, according to sex distribution

	MALE %	FEMALE %	TOTAL %
4 very happy	10,53	15,69	13.20
3 quite happy	67,37	51,96	59.39
2 not very happy	10,53	19,61	18.78
1 unhappy	8,42	5,88	3.55
0 I don't know	3,16	5,88	4.57
missing	0,00	0,98	0.51
total	100,00	100,00	100.00

Table 3 :Level of satisfaction, according to sex distribution

	MALE	FEMALE	TOTAL %
0-3 not satisfied	4.21	8.82	6.60
4-7 quite satisfied	55.79	57.84	56.85
8-10 very satisfied	40.00	32.35	36.04
missing	0.00	0.98	0.51
total	100.00	100.00	100.00

Table 4: Aspects of life according to their importance as source of happiness

	FAMILY	HEALTH	JOB	FRIENDS	FREE TIME
1st place	90	85	13	20	12
2nd place	64	66	20	26	22
3rd place	24	15	63	70	20
4th place	8	18	35	63	58
5th place	9	11	64	16	83
Missing	2	2	2	2	2
Total	197	197	197	197	197

Table 5: Level of importance of social activities and relations

	FAMILY	FRIENDS	SEX	FREE TIME	SPORTS	POLITICS	JOB	RELIGIONS	VOLUNT. ACTIVITIES
Very important	167	111	77	81	40	22	85	30	19
Quite important	27	74	86	98	66	56	100	47	63
Not very important	3	10	29	16	71	69	9	59	66
Not important	0	2	5	2	20	50	3	61	49
Total	197	197	197	197	197	197	197	197	197

Table 6: Sample composition by sex

	NUMBER	COMPOSITION (PERCENTAGE VALUES)
Male	95	48.22
Female	102	51.78
	197	100.00

Table 7: Sample composition by age

CLASS OF AGE	NUMBER OF OBSERVATIONS	COMPOSITION (PERCENTAGE VALUES)
20-29	58	29.44
30-39	95	48.22
40-49	26	13.20
50-59	11	5.58
more than 60	7	3.55
Total	197	100.00

Table 8: Mean level of happiness and satisfaction by marital status

	MEAN LEVEL OF HAPPINESS	STANDARD DEVIATION	MEAN LEVEL OF SATISFACTION	STANDARD DEVIATION
Never married	2.7301	0.88497534	6.5925	2.118346442
Separated, divorced and widowed	2.7228	0.91396012	6.5467	2.101311123
Married	2.7487	0.88132743	6.6358	2.104424301

Table 9: Mean level of happiness and satisfaction and presence of children

	MEAN LEVEL OF HAPPINESS*	MEAN LEVEL OF SATISFACTION*
Zero children	2.7422(0.878)	6.617(2.102)
One or more children	2.7954(0.911)	6.626(2.096)

*Standard deviation in parenthesis

Table 10: Working condition and mean level of happiness and satisfaction

	MEAN LEVEL OF HAPPINESS	MEAN LEVEL OF SATISFACTION
Employed	2,7333	6,6256
Unemployed	2,7022	6,5561
Self employed	2,7287	6,601
Retired	2,8315	6,8947

Table 11: Level of income and mean life satisfaction and level of happiness

CLASSES OF INCOME	MEAN LEVEL OF HAPPINESS	MEAN LEVEL OF SATISFACTION
less 10.0000	2,7094	6,5698
10.000-20.000	2,7301	6,6031
20.000-30.000	2,7305	6,6269
30.000-40.000	2,7307	6,6428
more than 40.000	2,7515	6,7261

Table 12: Uses of income

	MEAN PERCENTAGE VALUES
House	26,15
Food	18,26
Travel freetime	14
Transport	10,34
Dress	11,57
Telephone, internet	7,54
Other	12,14

Table 13: Altruism: frequencies according to amount of money given per year

	MEAN LEVEL OF HAPPINESS	MEAN LEVEL OF SATISFACTION
Up to 100 Euro	2,7396	6,6094
From 100 to 1000 Euro	2,7516	6,6105
More than 1000 euro	2,7869	6,6747

Table 14: Definitions of happiness: percentage of positive answers

DEFINITIONS OF HAPPINESS	N. POSITIVE ANSWERS	N. POSITIVE ANSWERS PERCENTAGE
Hedonism	89	45,18
Life satisfaction	146	74,11
Human fulfillment	134	68,02
Stoics	61	30,96
Virtue	148	75,13
Bliss	68	34,52
Tranquillity	78	39,59
Harmony	154	78,17
Fortune	15	7,61

Table 15: Most preferred definition of happiness

Hedonism	15
Life satisfaction	54
Human fulfillment	33
Stoics	6
Virtue	25
Bliss	7
Tranquillity	4
Harmony	38
Fortune	2

Table 16: Happiness as desire: subjective vs objective concept

	OBJECTIVE HAPPINESS	SUBJECTIVE HAPPINESS
Negative answer	58,38	39,09
Postive answer	40,10	59,39
Missing	1,52	1,52
Total	100,00	100,00

Table 17: Happiness as events : personal, material and relational events

	PERSONAL HAPPINESS	MATERIAL HAPPINESS	RELATIONAL HAPPINESS
Negative answer	44,16	86,29	60,41
Postive answer	54,31	12,18	38,07
Missing	1,52	1,52	1,52
Total	100,00	100,00	100,00

Table 18: Definition of variables used in the analysis

VARIABLE	DEFINITION
<i>Dependent variables</i>	
CHAGH001	Assessment of personal happiness (1=unhappy, 2= not very happy; 3=quite happy; 4=very happy)
CHAGS001	Assesment of global satisfaction in life (from 1= unsatisfied to 10= completely satisfied)
DCHAGH001	Dummy for level of happiness (0 for level 1 and 2, 1 for level 3 and 4)
<i>Independent variables</i>	
perdD002	Age, number of years
perd004	Sex, =1 if female
perd005	Present marital status, =1 if married, 0=single, separated or divorced, widowed
perd0061	Level of education, =1 if less than high school
perd0062	Level of education, =1 if high school education
perd0063	Level of education, =1 if university and post university education
perd008	Presence of children, number of children
perln001	Natural logarithm of annual income
wrk1	Working condition, =1 if employed, =0 if unemployed or retired
reg0021	Cultural events, =1 if attended once a week
reg0022	Entertainment, =1 if attended once a week
reg0023	Sports, =1 if attended once a week
reg0024	Friends, =1 if attended once a week
reg0025	Volunteering, =1 if attended once a week
reg0026	Religions, =1 if attended once a week
alt001	Altruism, =1 if there is donation, 0= otherwise
risk002	Risk aversion, =1 if here is risk aversion, =0 if there is neutrality or propension toward risk
exi001	Expectation of inflation, % value of inflation perceived
exu001	Expectation of unemployment, % value of unemployment perceived
qpsg001	Quality of public services, if very low and low=0, if enough, good or very good=1
qpst001	Quality of public transport, if very low and low=0, if enough, good or very good=1
qpsht001	Quality of public health services, if very low and low=0, if enough, good or very good=1
dchaosd	Concepts of happiness subjective and objective desires, if objective=1, if subjective=0
chadd001	Concepts of happiness, dummy =1 for answers 1,2,3 and=0 for answers 4,5,6,7,8

Table 19: Sample descriptive statistics

VARIABLE	OBS	MEAN	STD. DEV.	MIN	MAX
id001 , identification number	197	99	57.01316	1	197
perd002 , age	197	35.25888	10.38292	20	70
perd004 , sex	197	.5177665	.5009573	0	1
perd005 , present marital status	197	.2944162	.4569411	0	1
perd0061 , education, less than high school	197	.0964467	.295955	0	1
perd0062 , education, high school	197	.3350254	.4732019	0	1
perd0063 , education, university and post university	197	.5685279	.4965435	0	1
perd008 , presence of children	197	.3908629	.8109693	0	4
periln001 , natural logarithm of annual income	189	9.828655	.6479935	8.517193	10.59663
dummy1peril , dummy variable for mean annual income higher 15000 euros	189	.5396825	.4997466	0	1
rsk002 , risk aversion	191	.1361257	.3438232	0	1
chad001 , definition of happiness	197	.4517766	.498937	0	1
chad002 , definition of happiness	197	.7411168	.4391373	0	1
chad003 , definition of happiness	197	.680203	.467586	0	1
chad004 , definition of happiness	194	.314433	.4654909	0	1
chad005 , definition of happiness	196	.755102	.4311279	0	1
chad006 , definition of happiness	195	.3487179	.4777912	0	1
chad007 , definition of happiness	196	.3979592	.4907304	0	1
chad008 , definition of happiness	196	.7857143	.4113767	0	1
chad009 , definition of happiness	196	.0765306	.266526	0	1
chad010 , preferred definitions of happiness	186	17.15591	2.469794	14	22
chadd001 , concept of happiness, dummy for answer 1,2,3 and 4,5,6,7,8	186	.5483871	.4989964	0	1
chagh001 , assessment of personal happiness	196	2.780612	.7764691	1	4
chags001 , assessment of global satisfaction in life	196	6.627551	2.102271	1	10
dchagh001 , dummy for level of happiness	196	.7295918	.4453081	0	1
chaosh0011 , objective happiness in form of desires	194	.4072165	.492587	0	1
chaosh0012 , subjective happiness in form of desires	194	.4072165	.492587	0	1
dchaosd , Dummy concept of happiness subjective and objective desires	190	.3947368	.4900855	0	1
wrk001 , working conditions	195	.7589744	.4288068	0	1
regd002 , relational goods, number of weekly activities	197	.9746193	.1576792	0	1
reg0021 , weekly attendance of cultural events	197	.2588832	.4391373	0	1
reg0022 , weekly attendance of entertainment activities	197	.9746193	.1576792	0	1
reg0023 , weekly attendance of sports activities	197	.4467005	.4984177	0	1
reg0024 , weekly meeting of friends and/or parents	197	.8730964	.333713	0	1
reg0025 , weekly attendance of volunteering activities	197	.071066	.2575897	0	1
reg0026 , weekly attendance of religious functions	197	.1827411	.45971	0	4
alt001 , altruism in form of donation	192	.5736979	.4951581	0	1
exi001 , perceived annual inflation rate	196	.1180786	.1416619	.018	1
exu001 , perceived annual unemployment rate	195	.1742051	.1761206	.02	2
qpsg001 , perceived quality of public services	197	.4822335	.5009573	0	1

Table 20: Relationship between happiness and satisfaction and a set of variables, oprobit estimation technique

	LEVEL OF HAPPINESS	LEVEL OF SATISFACTION
perd002	-0.061***(0.014)	-0.052***(0.012)
perd004	-0.084(0.175)	-0.191(0.158)
perd005	0.500*(0.265)	0.406*(0.238)
perd0062	-0.858**(0.382)	-0.469(0.337)
perd0063	-0.715*(0.367)	-0.360(0.322)
perd008	0.201(0.167)	0.218(0.154)
periln001	0.352**(0.142)	0.281**(0.127)
wrk001	0.438**(0.221)	0.473**(0.199)
reg0021	-0.072(0.213)	0.092(0.192)
reg0022	0.390(0.596)	0.945*(0.554)
reg0023	0.091(0.184)	-0.067(0.165)
reg0024	0.276(0.296)	0.069(0.273)
reg0025	1.041***(0.379)	1.267***(0.335)
reg0026	0.369*(0.201)	0.278(0.176)
alt001	-0.356**(0.175)	-0.146(0.157)
	<i>Pseudo R2 = 0.1159</i>	<i>Pseudo R2 = 0.0665</i>
*** $p < .01$ ** $p < 0.05$ * $p < 0.1$	<i>LR chi2(15) = 46.97</i>	<i>LR chi2(15) = 49.40</i>

Table 21: Relationship between happiness and satisfaction and a set of variables, dummy for income, oprobit estimation technique

	HAPPINESS AND INCOME AS DUMMY VARIABLE	SATISFACTION AND INCOME AS DUMMY VARIABLE
perd002	-0.059***(0.015)	-0.057***(0.013)
perd004	-0.004(0.180)	-0.137(0.162)
perd005	0.639**(0.280)	0.578**(0.250)
perd0062	-0.772**(0.378)	-0.592*(0.334)
perd0063	-0.757**(0.376)	-0.450(0.330)
perd008	0.206(0.175)	0.188(0.162)
dummy1peril	0.104(0.186)	0.018(0.167)
wrk001	0.392*(0.227)	0.409**(0.205)
reg0021	0.007(0.216)	0.171(0.196)
reg0022	1.111*(0.659)	1.480**(0.617)
reg0023	0.203(0.192)	0.021(0.171)
reg0024	0.133(0.304)	-0.151(0.281)
reg0025	0.627(0.383)	0.869**(0.348)
reg0026	0.457*(0.239)	0.503**(0.211)
alt001	-0.433**(0.188)	-0.271(0.168)
rsk002	-0.356(0.264)	-0.555**(0.235)
exi001	-0.466(0.734)	-0.076(0.648)
exu001	-0.481(0.634)	-1.129**(0.567)
qpsg001	-0.186(0.179)	-0.026(0.160)
	<i>LR chi2(19)=41.07</i>	<i>LR chi2(19)=48.97</i>
*** $p < .01$ ** $p < 0.05$ * $p < 0.1$	<i>Pseudo R2=0.1082</i>	<i>Pseudo R2=0.0694</i>

Table 22: Relationship between happiness and satisfaction and a set of variables, oprobit estimation technique

	LEVEL OF HAPPINESS	LEVEL OF SATISFACTION
perd002	-0.064***(-0.06)	-.058***(0.013)
perd004	-0.045(-0.04)	-0.164(0.164)
perd005	0.681**(0.681)	0.598**(0.251)
perd0062	-0.785**(-0.78)	-0.533(0.344)
perd0063	-0.673*(-0.67)	-0.367(0.334)
perd008	0.173(0.172)	0.191(0.159)
periln001	0.371**(0.370)	0.230(0.144)
wrk001	0.445*(0.445)	0.494**(0.205)
reg0021	-0.051(-0.05)	0.126(0.194)
reg0022	0.822(0.822)	1.256**(0.632)
reg0023	0.136(0.135)	-0.012(0.170)
reg0024	0.320(0.319)	-0.015(0.283)
reg0025	1.089*** (1.088)	1.251*** (0.344)
reg0026	0.325(0.324)	0.336(0.213)
alt001	-0.440**(-0.44)	-0.269(0.164)
rsk002	-0.064***(-0.06)	-0.058*** (0.013)
exi001	-0.045(-0.04)	-0.164(0.164)
exu001	0.681**(0.681)	0.598**(0.251)
qpsg001	-0.785**(-0.78)	-0.533(0.344)
	<i>Pseudo R2 = 0.1379</i>	<i>Pseudo R2 = 0.0820</i>
*** <i>p</i> <.01** <i>p</i> <0.05* <i>p</i> <0.1	<i>LR chi2(19) = 53.69</i>	<i>LR chi2(19) = 58.46</i>

Table 23: Relationship between happiness a set of variables, oprobit estimation technique- Sample for definitions 1, 2, 3 and definition 4,5,6,7,8

	CONCEPTS OF HAPPINESS, DEFINITIONS 1,2,3	CONCEPTS OF HAPPINESS, DEFINITIONS 4,5,6,7,8
perd002	-0.058*** (0.015)	-0.061** (0.024)
perd004	-0.050(0.181)	-0.418(0.295)
perd005	0.466*(0.268)	0.258(0.406)
perd0062	-0.884** (0.389)	0.533(0.757)
perd0063	-0.717*(0.380)	0.227(0.315)
perd008	0.156(0.177)	0.508*(0.270)
periln001	0.369** (0.144)	-0.051(0.211)
wrk001	0.444** (0.224)	0.427(0.395)
reg0021	-0.090(0.220)	0.314(0.394)
reg0022	0.195(0.609)	-0.234(0.701)
reg0023	0.099(0.191)	0.082(0.303)
reg0024	0.430(0.318)	0.390(0.384)
reg0025	1.050*** (0.394)	1.091** (0.554)
reg0026	0.359*(0.210)	0.776** (0.354)
alt001	-0.408** (0.181)	-0.573*(0.296)
	<i>Pseudo R2 = 0.1181</i>	<i>Pseudo R2 = 0.1508</i>
*** <i>p</i> <.01** <i>p</i> <0.05* <i>p</i> <0.1	<i>LR chi2(15) = 45.70</i>	<i>LR chi2(14) = 27.62</i>

Table 24: Relationship between happiness a set of variables, oprobit estimation technique-Sample for definitions 1, 2, 3 and definition 4,5,6,7,8, adding new variables

	LEVEL OF HAPPINESS DEFINITIONS 1,2,3	LEVEL OF HAPPINESS DEFINITIONS 4,5,6,7,8
perd002	-0.060***(0.015)	-0.065**(0.025)
perd004	-0.019(0.190)	-0.532*(0.311)
perd005	0.649**(0.286)	0.464(0.433)
perd0062	-0.787*(0.403)	-0.271(0.837)
perd0063	-0.638(0.401)	-0.051(0.826)
perd008	0.115(0.181)	0.579**(0.281)
periln001	0.383**(0.163)	0.053(0.279)
wrk001	0.436*(0.232)	0.576(0.424)
reg0021	-0.076(0.223)	0.339(0.417)
reg0022	0.695(0.698)	0.195(0.833)
reg0023	0.151(0.200)	0.258(0.325)
reg0024	0.410(0.329)	0.396(0.399)
reg0025	1.120*** (0.410)	1.135** (0.562)
reg0026	0.309(0.260)	0.729** (0.370)
alt001	-0.491** (0.191)	-0.565* (0.323)
rsk002	-0.458(0.289)	-0.598(1.458)
exi001	-0.081(0.745)	2.131(1.572)
exu001	-0.013(0.685)	0.179(0.306)
qpsg001	-0.112(0.104)	-0.236(0.416)
	<i>LRchi2(19)=52.04</i>	<i>LRchi2(19)= 32.91</i>
***$p < .01$**$p < 0.05$*$p < 0.1$	<i>PseudoR2=0.1401</i>	<i>PseudoR2=0.1830</i>

Table 25: Relationship between satisfaction a set of variables, oprobit estimation technique- Sample for definitions 1, 2, 3 and definition 4,5,6,7,8, adding new variables

	CONCEPTS OF HAPPINESS, DEFINITIONS 1,2,3- COEF	CONCEPTS OF HAPPINESS, DEFINITIONS 4,5,6,7,8- COEF
perd002	-0.056*** (0.014)	-0.056** (0.022)
perd004	-0.178(0.171)	-0.432(0.274)
perd005	0.541** (0.256)	0.402(0.384)
perd0062	-0.411(0.354)	0.540(0.753)
perd0063	-0.196(0.349)	0.868(0.739)
perd008	0.150(0.168)	0.526** (0.246)
periln001	0.285* (0.147)	-0.104(0.246)
wrk001	0.500** (0.210)	0.276(0.366)
reg0021	0.086(0.202)	0.163(0.365)
reg0022	1.002(0.647)	0.715(0.789)
reg0023	-0.001(0.179)	0.068(0.287)
reg0024	0.210(0.305)	0.390(0.361)
reg0025	1.331*** (0.362)	1.704*** (0.514)
reg0026	0.358(0.231)	0.485(0.313)
alt001	-0.249(0.170)	-0.233(0.274)
exi001	-0.035(0.662)	-0.151(1.310)
exu001	-0.474(0.613)	1.417(1.385)
qpsg001	-0.015(0.093)	0.354(0.274)
rsk002	-0.552** (0.258)	-0.558(0.367)
	<i>LR chi2(19) = 57.42</i>	<i>LR chi2(19) = 40.36</i>
***$p < .01$**$p < 0.05$*$p < 0.1$	<i>Pseudo R2 = 0.0863</i>	<i>Pseudo R2 = 0.1265</i>

Table 26: Relationship between happiness a set of variables, probit estimation technique-
Dummy variable for happiness and for objective and subjective concepts of happiness

	REGRESSION WITH DUMMY FOR LEVEL OF HAPPINESS	REGRESSION WITH DUMMY FOR LEVEL OF HAPPINESS AND FOR OBJECTIVE AND SUBJECTIVES DEFINITIONS
perd002	-0.062***(0.021)	-0.058***(0.021)
perd004	-0.494*(0.252)	-0.492*(0.259)
perd005	0.648*(0.388)	0.575(0.392)
perd0062	-0.980*(0.578)	-0.900(0.608)
perd0063	-0.445(0.571)	-0.295(0.598)
perd008	0.068(0.229)	0.060(0.231)
periln001	0.438**(0.203)	0.409**(0.206)
rsk002	-0.321(0.360)	-0.289(0.364)
chadd001		0.222(0.270)
wrk001	0.458(0.309)	0.445(0.321)
reg0021	-0.125(0.281)	-0.182(0.297)
reg0022	0.463(0.891)	0.327(0.896)
reg0023	0.434*(0.259)	0.425(0.262)
reg0024	0.666*(0.393)	0.666(0.409)
reg0025	1.330*(0.704)	1.395*(0.732)
reg0026	0.964**(0.443)	0.996**(0.471)
alt001	-0.486*(0.250)	-0.451*(0.257)
exi001	-0.919(0.909)	-0.998(0.920)
exu001	1.473(1.259)	1.694(1.280)
qpsg001	-0.412*(0.240)	-0.424*(0.245)

Table 27: Relationship between happiness a set of variables, oprobit estimation technique
Sub samples for objective and subjective desires

	OBJECTIVE DESIRES	SUBJECTIVE DESIRES
perd002	-0.186***(0.041)	-0.045**(0.020)
perd004	0.156(0.344)	-0.021(0.257)
perd005	2.429***(0.797)	0.490(0.339)
perd0062	-0.686(0.677)	-0.990*(0.581)
perd0063	-0.291(0.725)	-1.125**(0.563)
perd008	1.138*(0.608)	0.000(0.211)
periln001	0.572*(0.324)	0.279(0.271)
wrk001	0.439(0.346)	0.707*(0.387)
reg0021	0.395(0.443)	-0.225(0.285)
reg0022	1.647(1.660)	1.057(0.883)
reg0023	-0.049(0.363)	0.206(0.269)
reg0024	0.066(0.891)	0.311(0.362)
reg0025	1.838(1.195)	1.370***(0.493)
reg0026	1.079(0.717)	0.408(0.296)
alt001	0.276(0.381)	-0.908***(0.271)
rsk002	-0.186***(0.041)	-0.045**(0.020)
exi001	0.156(0.344)	-0.021(0.257)
exu001	2.429***(0.797)	0.490(0.339)
qpsg001	-0.686(0.677)	-0.990*(0.581)
	<i>LR chi2(19) = 43.97</i>	<i>LR chi2(19) = 39.83</i>
	<i>Pseudo R2 = 0.3115</i>	<i>Pseudo R2 = 0.1720</i>