Generativity and subjective wellbeing: what the homo economicus is missing

This version: April 2019

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We show that generativity, intended as the capacity of affecting positively other human lives, has a strong and significant effect on life sense and life satisfaction. We define three generativity dimensions: individual generativity power, local generativity power and individual generativity in act. We find that generativity in act (both in its leisure and work dimensions) has a positive and significant effect on subjective wellbeing. The gross effect is however smaller than the net effect since generativity in act is negatively correlated with the internal locus of control (control over one's own life). Our findings have strong policy implications since generativity affects consumption and saving choices of utility maximizing economic agents and policymakers may create consensus by building generative societies.

Keywords: life satisfaction, wellbeing, life sense, generativity.

1.Introduction

Mill "Those only are happy, I thought, who have their minds fixed on some object other than their own happiness, on the happiness of others, on the improvement of mankind, even on some art or pursuit, followed not as a means, but as itself an ideal end. Aiming thus at something else, they find happiness by the way" (Mill, 1893: p.117)

The act of programming our (car or smartphone) satellite navigator to drive or walk toward a desired destination has become one of the most common actions in our lives. The most important decision when deliberating about such action is to choose and write where to go. Once this choice has been made, the decision on "how to go" is taken by the satellite navigator that is programmed to minimize the time needed to reach the chosen destination.

In a similar way, in the more general issue of life direction, the crucial decision for rational and maximizing individuals consists of defining the destination that maximizes their own life sense and satisfaction as a goal for their life journey. After this decision is taken rationality plays the role of the satellite navigator ensuring consistency between means and ends. This is why understanding drivers of life satisfaction is one of the most important topics in social and economic research if scholars and policymakers want to understand human action and choices.

Our paper aims to provide an original contribution to this important field of the literature by investigating an absolutely new and unexplored concept in economics (generativity) and testing its role as a driver of life satisfaction, with empirical findings that open the way to important considerations for social and economic policies.

The concept of generativity in social sciences originates from the seminal work of Erikson (1993 and 1998). According to the psychologist human beings live eight stages of psycho-social development[1]. Generativity is the positive response to the seventh stage concerning a crucial period of adult life going, according to Erikson, between 40 and 65.[2] This is a phase in which individuals continue to

[1] More specifically, Erikson's model of psycho-social development includes the following eight stages and challenges (Stage 1 - Trust vs. Mistrust Stage 2 - Autonomy vs. Shame and Doubt Stage 3 - Initiative vs. Guilt Stage 4 - Industry vs. Inferiority Stage 5 - Identity vs. Confusion Stage 6 - Intimacy vs. Isolation Stage 7 - Generativity vs. Stagnation Stage 8 - Integrity vs. Despair).

[2] According to Erikson (1993) individuals focus on career and family during their adulthood. When they feel they are contributing by being active at home and in the society they consider themselves

build their career and relational life and feel themselves "generative" when they believe to contribute positively with their work and activities to the life of their inner and outer circles (family and communities). In the same direction, Fisher (1995) contributes to this literature by considering generativity in older age as a fundamental factor concurring to successful ageing. He notes that for elder people, the possibility of feeling useful to the growth and development of someone else represents an essential aspect to perceive life as meaningful during its later stages.

According to Erikson, generativity consists in the sequence of four verbs: to desire, to give birth, to accompany, to let it go. This means that it is originated by the desire/willingness to pursue some socially desirable goal and that it comes into act with the birth of an action/activity. Generativity can grow and prosper only if the action/activity is cultivated and if the "originator" has the intelligence to understand that the activity cannot survive if it remains only on her/his shoulder. In this sense financial markets can be conceived as playing an important role for economic generativity by easing the creation of companies and the intra and intergenerational transfer of their property, that is, financial markets help to "give birth", "accompany" and "let it go" corporate organizations that create economic value.

Using a language closer to that of the economics and welfare literature we can define generativity at individual level as the act of an individual using her/his the available set of doing and being (capabilities) and the states of being and doing (functionalities) for doing things that the she/he expects may have positive effects on the life of other human beings[3] and, through them, also indirectly

successful. Those who do not feel involved view themselves as unproductive and experience a sense of failure.

[3] As is well known the concepts of capabilities and functionings have been first developed by Sen (1985) and Nusbaum (1988). According to Sen Functionings are "states of being and doing" that relate to individual wellbeing (ie., being educated, healthy) and, as such, they are not identified in the goods that can be used as means to enable them. Capabilities are instead the set of functionings that an individual has access to. In this respect, while generativity in power relates to those capabilities and functionings that make generativity acts possible, generativity in act implies the use of

on her/his own life. As such, capabilities and functionings are necessary but not sufficient conditions for generativity (as they affect generativity power but they may not become generativity in act).

In a sense, the above definition of generativity operationalizes a well-known say of Genovesi[4] and John Stuart Mill (see our quote at the beginning of the paper) on happiness conceived as the unintended effect of a life dedicated to an activity that can contribute to the improvement of the mankind or of at least one other human being. The positive effect on one's own life and on life of other human beings implied by generativity includes valuable social and economic initiatives, altruistic actions but also relational life.

The concept of generativity aims to provide an original contribution to the ample literature of the determinants of subjective wellbeing. As we know a starting point of this literature is the Easterlin paradox with its descriptive evidence on the decoupling between per capita GDP and the share of very happy individuals in the US after the second world war. The paradox illustrates the fact that GDP is not a synthetic measure capturing sufficiently well neither subjective wellbeing, nor even economic satisfaction of the individual, which is better measured by household disposable income net of the cost of crucial goods such as education and health.[5] Stimulated by the always wider

capabilities and functionings for actions that are generative, ie. that are likely to affect positively lives of other human beings.

[4] "*Fatigate per il vostro interesse, niuno uomo potrebbe operare altrimenti, che per la sua felicità sarebbe un uomo meno uomo: ma non vogliate fare l'altrui miseria, e se potete e quando potete studiatevi di far gli altri felici. Quanto più si opera per interesse, tanto più, purchè non si sia pazzi, si debb'esser virtuosi. È legge dell'universo che non si può far la nostra felicità senza far quella degli altri*" [work hard for your own interest, no man could do otherwise, as he would be less human by not doing so: but do not work for the misery of others and, if possible, work out how to make them happy. The more you are self-interested, the more you must be virtuous if you are not fool. Is a natural law that you cannot make your own happiness without making that of other human beings"] (Genovesi, *Autobiografia e lettere*, p. 449).

[5] After the Easterlin's contribution many other authors have verified the regularity of this empirical evidence in different countries and periods. Support for the paradox has been found by Blanchflower and Oswald (2004) in the United States, United Kingdom, Belgium and Japan between 1970 and 1990, by Veenhoven (1993) in Japan between 1958 and 1987 and by Frey and Stutzer (2002) in the World Database of Happiness and the U.S. Bureau of Census. Stevenson and Wolfers (2008) find

availability of data on life satisfaction and life sense, the empirical literature on their drivers has evolved in several directions (for a survey on the life satisfaction literature see, among others, Veenhoven, 1993, Frey and Stutzer, 2002, Blanchflower and Oswald, 2004, Clark et al., 2006, Becchetti and Pelloni, 2015,). The usefulness of subjective wellbeing in the economic literature has grown in parallel to evidence on its effects as predictor of relevant economic variables such as job quit and productivity (Judge, 1992; Staw and Barsade, 1993 and Judge et al., 2001), self-assessed health and mortality (Becchetti et al., 2017; Idler and Kasl, 1995; McCallum et al., 1994; Benjamins et al., 2004; Idler and Angel, 1990 and Appels et al., 1996) and insurgence of chronical illnesses (Bachelet et al, 2016), to its usefulness to calculate the value of non-market goods with the compensating variation approach (Welsch, 2002 and Luechinger, 2009; Luechinger and Raschky, 2009; van Praag and Baarsma, 2005; Frey et al., 2009) and its importance for measuring satisfaction of citizens and voters for policymakers.

The life satisfaction literature has created a closer integration among social sciences (investigating the role of peer comparisons from sociology[6] and hedonic adaptation from psychology for instance) and has helped to go beyond the "consequentialist" utilitarian approach by which satisfaction is univocally defined by the outcome and not by circumstances lived during the action that led to the outcome itself.[7]

A line of conflict in the subjective wellbeing literature has been that between life satisfaction and the Amarthya Sen's capability approach. While life satisfaction has the unique advantage of being not "paternalistic" (since no one else than the individual involved may evaluate her/his own life

evidence against the paradox. Easterlin and Angelescu (2009) reply arguing that the paradox concerns the long term relationship between per capita GDP and happiness at cross-country level.

[6] See among others Ferrer-i-Carbonell (2005), Dorn, Fischer, Kirchgassner and Sousa-Poza (2008), Clark (2008) and Clark and Senik (2010).

[7] Frey and Stutzer (2005) with their work on procedural utility provide an important example of it when showing that the same outcome may be appreciated or not, depending on whether those evaluating it have been involved or not in the process of its creation.

satisfaction), it also suffers from the "happy slave" Sen's (1985) critique[8] by which even the most deprived can paradoxically declare themselves satisfied with their life if the level of their expectations is so low to eliminate any hope for improvement.

The generativity approach proposed in this paper lies somewhat in the middle. It looks at the life satisfaction and life sense effects of the generativity concept to test whether the latter concretely satisfies self-declared subjective wellbeing. In this sense it proposes an extension of the capability approach where generativity occurs only if the available set of doing and functionings (driven by good health, economic wellbeing, education) is effectively geared toward an activity by which individuals contribute positively to subjective wellbeing of other individuals. In a nutshell, if the capability approach concerns mainly (even though not exclusively) freedom and potential (akin to the Aristotelean concept of "power"), the generativity approach concerns the freedom and potential that is put into specific actions (akin to the Aristotelean concept of "act") to pursue activities that can positively contribute to wellbeing and self-fulfillment of other human beings.

With our paper we provide, to our knowledge, the first empirical test on the effect of generativity on subjective wellbeing. As a measure of generativity we use an index of activities that unambiguously produce positive effects on the lives of other human beings. Since these activities are mostly correlated with our leisure time they do not fully capture the generativity/non generativity component correlated with professional life. In order to overcome this limit, we use the job taxonomy of the SHARE database to define professions that are more/less generative. We therefore end up with two variables measuring generativity mostly in leisure and in working time, respectively.

Our findings show that the first (leisure) generativity measure contributes positively and significantly to life satisfaction and more so to life meaning. We as well find that generativity is more precious (has a higher marginal utility) for those individuals with lower individual generativity power (ie.,

[8] "*The defeated and the downtrodden come to lack the courage to desire things that others more favourably treated by society desire with easy confidence"* (Sen, 1985: 15).

with living conditions that make generativity more difficult such as older respondents, respondents with lower income and health). Our hypothesis on the job generativity measure is as well not rejected since jobs with higher generativity potential contribute more significantly to life satisfaction and life sense. We also find that the gross effect of generativity in act on subjective wellbeing is smaller than the net effect. This is because generativity in act is correlated with lower control over one's own life that, in turn, negatively affects life satisfaction. Our findings therefore identify a trade-off where "freedom for" (individual generativity in act) reduces "freedom of", but nonetheless positively contributes to life satisfaction and life sense.

2. The three components of generativity and our research hypotheses

We conceive generativity as having three dimensions. The first is generativity potential at individual level. To be generative individuals need good health and sufficient economic resources. Education is a third crucial factor that enhances individual potential for generativity.

The second dimension is generativity potential at local level and relates to the political environment in which the individual lives. Freedom of initiative, lack of corruption, equal opportunities, access to sources of external finance are all political conditions that make generativity possible.

The third dimension is generativity in act that goes from biological generativity (having children), to social, political and economic generativity as it involves all individual actions that may have a positive effect on lives of other human beings. As such, generativity in act concerns not only leisure activities, such as voluntary work or participation to social or political groups, but also working activities. In this respect we may reason on the different levels of generativity of different professions and test our hypotheses (as we will do in our empirical analysis that follows).

Based on these concepts we formulate the following research hypotheses

H_{01}: Life sense and life satisfaction are positively correlated with the three generativity dimensions: individual generativity potential, local generativity potential and generativity in act

With this hypothesis we mean that generativity affects positively and significantly life satisfaction and life sense in its different dimensions beyond the traditional controls used in this literature. More specifically, based on what considered above, we identify three components (individual generativity power, local generativity power and individual generativity in act) and split the latter into leisure and work (generativity in act) components. We argue that the two (individual and local) generativity power dimensions have a significant effect per se for two reasons. First, the two dimensions of (individual and local) generativity power are enjoyed per se and in the perspective of their future expected use. Second, generativity power (under the assumption that it is enacted) proxies part of the unobservable generativity in act given the inevitable limits of identifiable proxies to measure generativity in act itself. A problem when testing this hypothesis is that individual generativity potential coincides with standard controls in subjective wellbeing estimates. Hence what is more interesting is to test the role of individual generativity in act.

H_{02}: individual generativity in act is more related to life sense than to life satisfaction.

As shown by Nikolaef (2018) education (one of the factors affecting generativity) enhances capabilities and functionalities and therefore the individual's generativity power. In this respect it raises life sense. However, education may also raise expectations and reduce time left for leisure (thereby reducing individual control over one's own life). These two elements may have a negative effect on life satisfaction while not on life sense. To sum up, life sense is enhanced by more education but I may fell unsatisfied because my expectations are higher and I would like to have more time to express my generativity.

In the same way very high expectations may prompt individuals to be highly generative and, at the same time, enhance the gap between their action and the goals they want to reach. As a consequence, individual generativity in act will definitely contribute in a strong way to life sense, while more weakly so to life satisfaction.

H_{03}: the marginal utility of generativity is higher/lower for individuals endowed with less generativity potential

The impact of generativity on life sense and satisfaction should be in principle the same for individuals with higher (lower) income and education (that is, generativity potential). We may on the contrary believe that individuals with lower generativity potential enjoy more generativity in act because they realize that their achievement is more difficult and precious, exactly as an "underdog win" produces higher satisfaction to its supporters.

H_{04}: the gross effect of individual generativity in act is higher than the net effect

Generativity in act implies using one's own energies into a given direction. It requires effort and cultivation (ie. raising children, engaging in social and political action, etc.). As such it implies a trade-off between "freedom for" and "freedom of", thereby reducing individual control over one's own life (internal locus of control). Provided that the reduction of "freedom of" negatively affects subjective wellbeing we assume that the effect of individual generativity in act on subjective wellbeing is stronger when we control for "freedom of" than when we do not.

4. Source of data and main variables of interest

The dataset used to perform our empirical analysis has been created by combining four data sources. The first is the "Survey of Health, Ageing and Retirement in Europe (SHARE)".[9] This survey - apart from baseline socio-demographic information, such as economic and marital status, years of education or health conditions – gathers, by means of specific modules, information on daily activities, social and family networks and subjective wellbeing, of more than 65,000 respondents aged 50 and over living in one of 20 European countries where SHARE survey is taken (Austria, Germany, Sweden, Netherlands, Spain, Italy, France, Denmark, Greece, Switzerland, Belgium, Czech Republic, Poland, Ireland, Hungary, Portugal, Slovenia, Estonia and Luxembourg). This database is particularly useful to test the Erikson hypothesis of generativity that concerns mostly adult age. We specifically use to this purpose wave 5 that took place in 2013.

Our two main variables of interest are two measures of subjective wellbeing, eudaimonic happiness and life satisfaction. Self-assessed respondents' level of eudaimonic happiness is represented by the answers given to the question *"How often do you think your life has meaning?"*. The four available options ("often, sometimes, never, rarely") and the specific wording of this question present at least two main advantages. First, the fact of anchoring numbers to specific evaluations, mirrored in the adverbs used as options, lowers the noise of more subjective interpretations that might emerge in scale measured questions, such as life satisfaction from 0 to 10. Second, the wording in terms of frequency allows respondents to leave aside or weight differently recent events and temporary circumstances that instead affect significantly the overall evaluation of life satisfaction when asked in a specific moment in life. (Kahneman and Fredrickson, 1993; Redelmeier and Kahneman, 1996;

[9] The SHARE (Survey on Health, Ageing and Retirement) project is the most important EU longitudinal cross-national survey on individuals aged 50 or older at European level. It contains data on health, social networks and socio-economic status for around 130 thousand individuals. Data are harmonized with the English Longitudinal Study of Ageing (ELSA) and the U.S. Health and Retirement Study (HRS). National designs for data collection are made coherent and consistent by rigorous methodologies. More details on the project characteristics and on the wide literature using SHARE data may be found on the SHARE website.

Schwarz and Clore, 1983). Our second variable of interest is the cognitive measure of life satisfaction obtained from the question "*are you satisfied with your life?*", where 0 means completely dissatisfied and 10 completely satisfied. Respondents are asked to give an overall judgment about their life in a backward looking perspective, weighting recent and past events or circumstances. From the SHARE survey we also extract data from specific modules that provide information on job status, health status and self-assessed condition, including life expectancy, and social activities carried out by respondents. Due to the specific age composition of the SHARE survey, the question measuring respondents' life expectancy is of particular relevance. Independently from their age, respondents are asked to state the probability, from 0 to 100, that they will be alive in 10 years. This framing, which constitutes a unique feature of the SHARE survey, allows respondents to include in the judgment their subjective expectations on life expectancy. As well, the SHARE survey provides a set of eleven questions that allows us to construct an index of locus of control, that we calculate by means of a factor analysis. The concept of locus of control is due the Rotter's seminal work (1954) that describes it as a tool to understand the individuals' generalized expectancy about internal versus external control of reinforcement. Individuals with external locus of control tend to consider much of what happens to their life as driven by exogenous factors that do not fall under their control, like fate, luck or external circumstances determined by other people (family, boss) that have control over their own life. On the other hand, a prevailing internal locus of control signals the belief that one's own course of life events strictly depends on personal behavior and decision. The full set of variables collected from the SHARE database is listed in Table 1.

Our second source of data is the "EU Regional database" provided by the Quality of Government Institute (QoG) from which we obtained the European Quality of Government Index (EQI)[10]. It is the

[10] The European Quality of Government Index (EQI) is the only existing measure of institutional quality built at regional level for the European Union. Institutional quality in the database is multi-dimensional and includes quality and impartiality of public service together with a corruption

result of survey data collection on corruption and governance at NUTS2 level within the European Union, conducted in 2010 and 2013. The data merge either perception and experience of corruption with the public sector and contain information on how citizens consider various public sector services as impartially allocated and of good quality. The EQI index is extracted by a set of 16 questions regarding three main pillars: i) quality, ii) impartiality and iii) corruption in three main public sector services: i) education, ii) health and iii) law enforcement. Starting from individual data, the scores of each question are aggregated up to NUTS2 level and are then standardized. From this database we extract the regional index for each of the three pillars and the overall EQI index. The full procedure applied to calculate the index is described in the OECD's Handbook on Constructing Composite Indicators (Nardo et al. 2008)

The third source of data is the Heritage Foundation which provides the Economic Freedom Index (EFI) at national level. This index created by the Wall Street Journal measures the degree of economic freedom across 186 countries. It reflects the individual fundamental right to control ones' own labor and property, decide to work, produce, consume, and invest in the most preferred way without any coercion or constraint against freedom. The index scores from 0 and 100 and considers twelve different aspects of economic freedom over four main categories: i) rule of law, ii) government size. iii) regulatory efficiency and iv) market openness. The final aggregate index is a weighted average where each of the twelve aspect is given equal weight. We use the index for the year 2013.

The last source of data we use in our study is the regional database of the Eurostat[11]. We collect a set of variables at NUTS2 level to control for the main aspects of the socio-economic context of the region where respondents live, relative to the year of the SHARE survey. Specifically, we include in

measure. Corruption perception in the region of residence is also measured. Data collection is funded by the European Commission.

[11] More specifically, we use the NUTS1, 2 and 3 levels of the Eurostat (the statistical office of the European Union) regional database.

our dataset the logarithmic transformation of the regional gross domestic product per inhabitant in PPP, the unemployment rate of the working-age population (aged from 15 to 74 years), and the share of early leavers from education and training activities (aged from 18 to 24).

5. Descriptive statistics

Descriptive statistics presented in Table 1 show that our SHARE sample is slightly unbalanced towards female gender (56 percent of the sample). In spite of the age composition of our sample only 11 percent of the respondents consider her/his own health status as poor. 27 percent deem it to be fair, and the remaining as good (37 percent), very good (17 percent) or excellent (8 percent). 65 percent of the interviewed have an age between 50 and 70 years. Still, life expectancy, as measured by the subjective probability that the respondents will be alive in the next ten years, independently from actual age, is on average around 63 percent. Respondents, have 11 years of education on average. As of job status, 28 percent is still working, either as employers or employees. 56 percent have retired from work, while 3 percent result to be unemployed. Homemakers, unable to work because permanently sick or disabled and those who have a different working condition are respectively the 8, 4 and 1 percent of our sample. Roughly one fifth are service workers or employed in shops and market sales (21 percent). 5 percent works as plant and machine operator or assembler and 9 percent is involved in craft and related trade works. Only 3 percent is a skilled agricultural or fishery worker. Technicians or associate professionals, professionals, and legislators or senior officials or managers are respectively the 9 percent, 16 percent and 11 percent of our sample. 18 percent covers clerical offices and 8 percent is employed in an elementary occupation. Less than 1 percent belongs to armed forces. Strictly related to the job type is the variable about free time during the week. It is obtained as the difference between the total number of hours available in a week (168) and working hours. On average our respondents have 133 hours a week of free time, implying an average of 5 working hours a day. The average logarithmic transformation of household yearly income, varying from 0.52 to

16.12, is 10.06, corresponding approximately to 20,000 Euros. Concerning marital status, 73 percent of our respondents live with his/her spouse (71 percent married, 2 percent in a registered partnership). 13 percent are separated and 8 percent divorced. Those who never married constitute the minority of our sample, being only the 5 percent. In total 89 percent are parents, having at least one children, either natural or adopted. For what concerns social activities 18 percent are involved in voluntary or charity work and only 6 percent takes part to political activities. 30 percent instead declared to attend sport or social club and mostly the same percentage applies to those who reported to have supported friends or family members with physical help or a financial gift of at least 250,00€ (29 percent).

As of the regional variables, descriptive statistics show that the logarithmic transformation of GDP per inhabitant in PPP is around 10 (very close to the average household income of our sample). The richest region is Luxemburg, while the poorest is Calabria, southern Italy. Unemployment rate of the working age population (15 to 74 years) averages at 8.7 percent, with the highest value (36.2 percent) registered in Andalusia region (south Spain) and the lowest (3 percent) observed in Bayern region (south-east Germany). For what concerns youth participation, as measured by the percentage of early leavers from education or training courses of individuals aged from 18 to 24 years, the worst situation is in Spain (29.8 percent), in the Balearic Islands. The leadership in this respect belongs to Prague region (central Czech Republic), which registered a share of early leavers of 3.2 percent. For what regards the standardized corruption index, the worst value (-1.69) belongs to Campania, south center Italy, while the soundest region is Jutland (central Denmark). The best region in terms of quality of institutions is Flanders region, northern Belgium. The last place in this ranking belongs to Galicia region, in north western Spain. Regarding equal treatment of citizens, the best situation is in the Netherlands, Overijssel region (Eastern Netherlands), while the most unequal place is Calais (northern France). Finally, economic freedom index, calculated by Heritage Foundation at country level, is highest in Switzerland and lowest in Italy.

5.1 The Construction of the generative components

As discussed in the previous sections of the paper we define three generativity dimensions: i) individual generativity potential, ii) local generativity potential and iii) individual generativity in act.

In order to build the first generativity component, individual generativity potential, we use four items broadly describing individual socio-demographic characteristics. What we basically imply is that, in order to be potentially generative at individual level an individual needs i) good cultural background, expressed by the variable that records years of education, ii) adequate economic power, reflected in the logarithmic transformation of monthly household income, iii) good health conditions, derived from the question on self-assessed health status and expectations about being alive in the next future, as expressed by the question in which respondents are asked to state the probability that they will be alive in 10 years. These four items are provided in the SHARE survey. To construct our first component of generativity power at individual level we first create an index from 1 to 10 using the following equation:

$$\mathrm{Y} = \frac{\mathrm{X}-\mathrm{Min}}{\mathrm{Max}-\mathrm{Min}} \times 9 + 1 \qquad (1)$$

where, Y is the score of the underlying (health, income, education) variable, ranging from 1 to 10, X is the value of the original variable observed in the database, and Min and Max are respectively the lowest and highest value of the variable in the database. We then sum up the scores of the four items and divide the total by the total number of non missing values. Observations with 2 or more missing values are excluded from the sample. We decide to keep observations with just one missing value, and divide the sum by 3, because of the many missing values present in SHARE. The final component varies from 1.24, signaling very limited generativity capabilities, to 9.56, very high individual generativity potential, with a mean value of 6.08 and a standard deviation of 1.24.

The second dimension is local generativity power. In this respect we argue that sound socio-political context facilitates actual generativity and high quality institutions allow citizens to fully express their

functionalities and capabilities. More specifically, we assume that corruption, lack of equal treatment and limits to economic freedom jeopardize growth and life flourishing as, among other things, they can discourage individual initiative to invest in human capital (Mo, 2001). To capture the role played by the second generativity dimension we use four variables: the three pillar variables of the EQI index, measured at NUTS2 level, and the EFI index, only available at country level (see section 4 for the description of these variables). Therefore, every region within the same country shares the same EFI index with the others. The three pillars of the EQI index provide us with compact measures of the level of corruption, equal treatment and institutional quality of the European regions. The EFI index instead reflects the extent to which citizens, within a given country, are free to decide upon their economic initiatives. To construct the final local generativity power component we adopt the same procedure employed to create the component of individual generativity potential. We first scored each single variable in the range from 1 to 10 (using equation 1), we then sum up the scores and divide the total by the number of non missing variables. Again, observations with 2 or more missing values have been excluded from the analysis. The result provides a compact index reflecting the overall generative potential at regional level. It averages at 5.47, with the lowest score at 3.81 (Champagne-Ardenne, northern France), the maximum at 6.90 (Overijssel region, Eastern Netherlands), and a standard deviation of 0.73.

The last component of generativity aims to capture individual generativity in act. In order to build this factor we exploit a set of four SHARE dummy questions in which respondents are asked to state their involvement in specific social activities during the previous 12 months, each of them therefore taking value 1 when the respondent is involved and 0 otherwise. More specifically, we use the questions on participation in vocational and charity work, sport and social club attendance, political activities engagement and provision of help or monetary support to friends or family members. Along with these questions we also include a dummy variable taking into account biological generativity (having children or not, either adopted or natural). To create our index we sum up all the answers given to these questions and divide the total by the number of non missing variables. As for the other

two components, due to the presence of many missing values, observations with 2 or more missing values have been excluded from the sample. The final index varies from 0 to 1, with mean and median value of 0.34 and a standard deviation of 0.20. The region that enjoys the highest average value (0.54) is Utrecht, central Netherlands, while the region with lowest score (0.16) is Navarre, northern Spain. Correlation matrix presented in Table 1 shows pretty high positive correlation between component A and components B and C, 0.2 and 0.33, respectively. Components B and C instead have a correlation of 0.17. As expected, the stronger correlation is between individual generativity potential and individual generativity in act. As well, sounder regions allow individuals to be endowed with stronger generative potentials, that in turn translate into higher involvement in generative activities.

Along with the three components of generativity we also investigate the role played by the type of job to proxy generativity in workplace. Our guess is that professional circumstances might considerably affect the outcome of our dependent variable (eudaimonic happiness) through individual generativity in act. Differences in enjoyable free-time, workload, salaries and job satisfaction can alter notably the possibilities that individuals have to be generative so that, as a result, our findings might be driven by working conditions rather than by our components. To test our hypothesis we construct a multinomial variable (*GenJob*) with three categories capturing the potential generativity degree related with the job. The SHARE survey contains a question with 10 mutually exclusive job types that we classified as follows: i) low generative jobs (Plant and machine operator or assembler, Elementary occupation, Armed forces), ii) mid generative jobs (Technician, associate professional, Skilled agricultural or fishery worker, Service worker and shop and market sale, Craft and related trades worker) and iii) high generative jobs (Professional, Clerk, Legislator, senior official or manager). The underlying assumption is that jobs in the third group have more autonomy and power to influence lives of other human beings with personal decisions than those in the first group. We then used dummies capturing participation to the three groups as additional regressors in our analysis.

SHARE survey also allows us to construct a measure of individual Locus of Control (LoC). The list of variables we use to construct our measure of LoC are presented in Table 1. They are all questions, with 4 possible, mutually exclusive, answers, varying from full agreement to full disagreement. To construct the index we run a factor analysis, and took the scores of the second factor to identify the external locus of control (as shown by Figure 1 Panel B the second factor as expected is highly positively correlated with items such as "age prevents from doing things" "life is out of control"," I feel left out of things",family responsibilities prevent me from doing things") . Panels A and B in Figure 1 report the eigenvalues of the factor analysis and the factor loadings of the first two factors after varimax rotation, respectively. For reasons of space we omit to report the tables with all the eigenvectors and eigenvalues of all the factors.

6. Econometric specification

To investigate the effect of generativity elements on our dependent variables of subjective wellbeing we estimate the following model, by means of an ordered logistic regression

$$
\begin{aligned}
(1)\quad & SubjectiveWellbeing_t \\
& = \alpha_0 + \alpha_1 ComponentA_t + \alpha_2 ComponentB_t + \alpha_3 ComponentC_t \\
& + \alpha_4 DummyHighCLowA_t + \alpha_5 DummyHighCLowB_t + \alpha_6 FrequencyOfPray_t \\
& + \alpha_7 ExternalLoC_t + \sum_g \beta_g\, JobType_t + \alpha_8 FreeTime_t \sum_k \gamma_k\, SDControls_t \\
& + \ \alpha_9 GDPPerInhab_t + \alpha_{10} UnemploimentRate(15-74)_t \\
& + \alpha_{11} EarlyLeaversRate + \sum_m \lambda_m\, DCountry_t + \sum_r \lambda_r\, DWave_t + \varepsilon_t
\end{aligned}
$$

where the dependent categorical variables are eudaimonic wellbeing ("How often do you think your life has meaning?") and life satisfaction ("Are you satisfied with your life?"), measured as explained

in section 4. In our first specification we regress eudaimonic happiness and life satisfaction on the three generativity components. We then introduce additively two dummy variables that inform us about the effect of being involved in generative activities when generative (personal and political) potentials are relatively low (below the median value). The two dummy variables therefore take value 1 when the component C is above the median and component A(B) is under the median value, 0 otherwise. We further control for the level of religiosity and locus of control, to clean the effect of our components from these concurring factors. In the second specification we include measures to observe the effect of generativity at workplace. As explained in the previous section, the idea behind this analysis is that the job characteristics can affect directly generativity in act, especially among elders. First, some job types provide contingently more opportunities to be generative (being a teacher or a doctor for example) than others. To that aim we include two additional explanatory variables capturing respectively mid generative and high generative jobs as explained in section 5 (with low generative jobs being the omitted benchmark) and ii) a variable capturing leisure time (*FreeTime).* Socio-demographic controls (*SDControls)* include 10 five-year age class dummies (50 to 55 years omitted benchmark), a gender dummy (*Male*, being 1 for males and 0 for females), marital status dummies (one for each of the 6 categories: married, registered partnership, separated, which is our omitted benchmark, divorced, widowed and never married) and job status dummies (one for each of the 6 working conditions: employed, unemployed, retired, unable to work because permanently sick or disabled, homemaker, and other job, our omitted benchmark). Given the specific age composition of our sample, we further add a dummy variable to control for long term illness. We also include 3 regional variables, measured at NUTS2 level, to control for objective economic conditions, that are the (log) GDP in PPP per inhabitant, the unemployment rate of the working age population (i.e. from 15 to 74 years) and the share of young adult early leavers from education and training courses (aged 18 to 24 years). Finally, we include in our estimates country dummies to control for country effects. The inclusion of these dummies is important as it allows to clean our regression estimates from

cultural or linguistic differences that can threaten comparability across respondents' answers about life sense and life satisfaction.

6.1 Econometric findings

Regression outputs with eudaimonic happiness and life satisfaction as dependent variables are presented in Tables 3.1 and 4.1, respectively. Starting with eudaimonic happiness, we find that respondents enjoy per se the two (local and personal) conditions of generativity potential, net of the inclusion of all socio-demographic and regional controls. We interpret these findings in two ways. First, both the personal and local potential generativity dimensions give satisfaction per se since individuals enjoy having a life full of opportunities (good education, good income, high expected life expectancy living in a region without corruption) Second, our two variables of (leisure and work) generativity in act do not capture all generativity dimensions and the generativity potential components proxy for other unobservable dimensions of generativity in act.

Our findings also show that generativity in act adds a positive and significant contribution to life sense beyond generativity in potential. More specifically, we also find that the size of the effect of component C (generativity in act) is more than double with respect to that of individual generativity potential (component A) (Table 3.1 column 1 to 5). Overall, component C results to be the strongest predictor of life sense, with a marginal effect of 0.195, that is, a unit change of this indicator from its sample mean raises by 19.5 percent the odds of reporting the highest level of life sense (Table 3.2). Our results also show a "support effect" of high involvement in generative activities when individual generative potential is scarce. Being highly engaged when component A is relatively low (below the median value) increases the log odds of reporting the highest level of life sense by 0.14. Conversely, highly generative individuals suffer from living in areas with low generative potential and this contributes negatively to their life sense. In general, potential political generativity (component B) is less correlated with individual eduaimonic happiness and loses significance in the full model, when

we include locus of control as additional regressor (Table 3.1, column 5). Control variables behave in the expected direction. Male gender is negatively correlated with life sense. Being employed affects positively the probability to report the highest level of life sense, and relational success as manifested by sharing life with a partner, either in a marriage or in a registered partnership, correlates significantly and positively with eudaimonic happiness. On average, ageing (net of the effect of health conditions also captured by our regressors) increases the perception of a meaningful life until it reaches the peak at 80-85 years. After that age the coefficients loose significance.

We repeat our estimations by replacing eudaimonic happiness with the cognitive measure of life satisfaction. Overall results (Table 4.1) are consistent with our previous findings, with some differences in magnitudes. Confirming our first and second hypotheses, each of the three components correlates positively with life satisfaction, even though the leading position in terms of magnitude is now taken by component A. This implies that generativity in act plays a more important role in determining higher levels of life sense than life satisfaction. Still, the magnitude of the effect of component C is 50 percent higher when we include the index of external LoC in our regression (columns 4 and 5 of Table 4.1), thus confirming our hypothesis Ho_4 about the trade-off between "freedom of" and "freedom for" when investigating the determinants of life satisfaction. The null hypothesis on the absence of a significance difference between the component C coefficients in columns 4 and 5 (ie. in specifications with/without the locus of control variable) is rejected (Table 4.3). One of the main drivers of this result lays in the interplay with family sphere and more in general control over time. Feeling the burden of family responsibilities and duties as threatening individual freedom, coupled with high commitment in socially generative activities, drives externally the locus of control, thereby determining the trade-off. In fact, highly engaged individuals, on average, believe that family responsibilities prevent them to do the things they want to do (Table 9). These findings can be interpreted in light of the higher commitment and effort levels required by actual generativity.

Stronger differences with respect to life sense emerge in the set of controls. Regarding marital status, all the categories (against the omitted benchmark of separated) are positively and significantly correlated with life satisfaction. Concerning job status instead we observe that unemployment is the only condition that relates negatively with our dependent variable. By contrast, having retired from work or being a homemaker, along with being employed, have a better positive effect on life satisfaction than the omitted benchmark of the unemployment status. Suffering from long term illness also enters the relationship in negative terms.

In the second specification we re-estimate our model including the variables representing generativity in professional life and free time disposal. Results are reported in Tables 5 and 6 with life sense and life satisfaction as dependent variables respectively. Our main findings are confirmed in this specification as well. Jobs characterized by high generativity potential are strongly and positively correlated with life meaning and life satisfaction (low generative job as omitted benchmark) with the coefficient of the full model more relevant for the former (columns 5 of Tables 5 and 6). Still, generativity in act (component C) maintains its effect on our dependent variables net of the job type. Our findings on the tradeoff between "freedom for" and "freedom of" (on life satisfaction) are also confirmed since the coefficient of the component C is markedly higher when we add the external locus of control among regressors.

7. Robustness checks

We check with bootstrap estimates whether our results are robust when we depart from the normality assumption on our dependent variable. In order to select the optimal number of bootstrap replications we follow the Davidson-Mk Kinnon (2000) A-procedure that fixes at 491 the number of replications that ensure that conflicts between the predicted and the actual p-value are just 0.0015. Hence, the probability of have a downward bias in our bootstrapped standard errors is extremely low with this

number of replications. Our main findings are unchanged with bootstrapped estimates (Tables 7.1 and 7.2).

We further test whether our most important findings depend on some outlier countries with the Dfbeta test. More specifically, following the approach of Frey and Stutzer (2000) and Otterbach (2010), we consider the coefficient of our variable of interest in the fully augmented specification and compare it with the coefficient estimated when omitting one different country at a time. We then compute the difference of the coefficients divided by the second regression standard error

$$DFBETA_{i,k} = \frac{\beta_k - \beta_{k(-i)}}{se_{k(-i)}}$$

with, β_k being the coefficient of the fully augmented regression, $\beta_{k(-i)}$ the coefficient of the regression where country *i* is omitted from the sample and $se_{k(-i)}$ its standard error. Belseley, Kuh, and Welsh (1980) calculate that the significance of the considered regressor does not depend crucially from the omitted country if the value of the DFBETA statistics is below the 1.96 threshold. Our findings show that this is the case both for country and gender (with the only exception of Germany affecting strongly the result on life satisfaction) (Tables 8.1-8.4).

In a final check we verify whether the very strong result of the C component (individual generativity in act) depends from the fact that we grouped A and B generativity variables in only one regressor. We therefore repeat our estimates disentangling A and B components. We find that the significance of the C component (and its magnitude) is unchanged.[12]

8. Conclusions

[12] Results are omitted for reasons of space and available upon request.

Our work takes inspiration from the well-known concept of generativity, developed by Erikson in social psychology. According to his perspective generativity, intended as the capacity to positively influence one's own community with personal action, is one of the main drivers of life sense and life satisfaction in adult life. If this is the case, we have discovered a source of social and economic choices whose role has been neglected in the construction of standard individual utility functions in economic models.

In the first part of the paper we introduce for the first time, to our knowledge, this concept in economics, define three dimensions of generativity (personal and local generativity power, and personal generativity in act) and relate our work to the subjective wellbeing and capabilities literature. More specifically, we argue, the concept of personal and local generativity power is akin to that of Amarthya Sen's concept of capabilities, while that of personal generativity in act relates to the capacity of transforming the generativity potential into actions that positively affect other human beings.

In order to make testable our general hypothesis on the positive effect of generativity on subjective wellbeing we create two variables measuring the third dimension (personal generativity in act) in leisure and work time respectively.

Our findings show that all our generativity variables significantly affect life satisfaction and life sense. In terms of economic significance, the strongest result in magnitude we have is that a unit change from the sample mean of the individual generativity in act component raises by 19.5 percent the odds of declaring the highest level of life sense. We also find that individuals with lower personal generativity power enjoy more generativity in act. We finally identify a trade-off between personal generativity in act and internal locus of control since generativity in act implies strong commitment over time use of one's own life and is therefore negatively correlated with control over it. This implies that the gross effect of generativity in act is stronger than the net effect, that is, the impact of personal generativity in act is positive but smaller when we do not correct for the (negative) effect of internal

locus of control on subjective wellbeing. This specific finding implies a trade-off between "freedom for" (personal generativity in act) and "freedom of" (internal locus of control).

We believe that our findings have relevant implications for positive and normative economics.

From the first point of view they identify an unexplored driver of consumption and saving choices and help to shed light on some dilemmas such as the children-happiness puzzle showing that individuals decide to have children, even though the latter seem to contribute negatively to their own wellbeing empirically (Frey and Stutzer, 2000; Alesina et al., 2004; Di Tella et al., 2003 and Smith, 2003). Looking at our findings this puzzle may be explained by the fact that children positively contribute to generativity in act and to subjective wellbeing but strongly reduce internal locus of control of parents in their young age. When they grow up the trade-off lessens, thereby contributing positively to parental life satisfaction. If life satisfaction answers are not so forward looking and heavily affected by internal locus of control, this explains the paradox of choosing to have children even though they negatively contribute to the current self-declared life satisfaction.

In terms of policies our findings indicate that policymakers should set the goal of fully generative societies aiming to maximize the three generativity dimensions for each individual if they want to increase and strengthen political consensus. The toughest and more fascinating challenge is pursuing this goal for individuals that have lower personal generativity potential and, as such, (as shown in our empirical evidence) enjoy more generativity in act. The importance of quality of jobs and policies for active ageing (such as lifelong learning to increase capabilities, functionalities and generativity, voluntary work, etc.) for the elders and their families is therefore a straightforward consequence of our results.

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Table 1. Generative components. Correlation matrix

Components	A	B	C
A	1.00		
B	0.20	1.00	
C	0.33	0.17	1.00

Table 2. Summary statistics

Eurostat variables	Obs	Mean	Std. Dev.	Min	Max
Log GDP per inhabitant NUTS2	39022	10.23	0.35	9.67	11.16
Unemployment rate (age 15 - 74) NUTS2	39022	8.73	5.23	3.00	36.20
Early leavers rate (age 18 - 24) NUTS2	41062	9.31	4.81	3.20	29.80

SHARE Variables	Obs	Mean	Std. Dev.	Min	Max
Age class					
50 – 55	65463	0.14	0.34	0	1
56-60	65463	0.17	0.37	0	1
61-65	65463	0.18	0.38	0	1
66-70	65463	0.16	0.37	0	1
71-75	65463	0.13	0.34	0	1
76-80	65463	0.10	0.30	0	1
81-85	65463	0.07	0.25	0	1
86-90	65463	0.03	0.18	0	1
91-95	65463	0.01	0.10	0	1
95+	65463	0.00	0.04	0	1
Marital status					
Married	25507	0.71	0.45	0	1
Registered partnership	25507	0.02	0.12	0	1
Separated	25507	0.13	0.11	0	1
Divorced	25507	0.08	0.27	0	1
Widowed	25507	0.13	0.34	0	1
Never married	25507	0.05	0.22	0	1
Employment status					
Unemployed	65273	0.03	0.17	0	1
Employed	65273	0.28	0.45	0	1
Retired	65273	0.56	0.50	0	1
Sick or disabled	65273	0.04	0.19	0	1
Homemaker	65273	0.08	0.27	0	1
Other job	65273	0.01	0.10	0	1
Job type					
Technician or associate professional	10256	0.09	0.29	0	1
Clerk	10256	0.18	0.38	0	1
Service, shop and market sales worker	10256	0.21	0.40	0	1
Skilled agricultural or fishery worker	10256	0.03	0.16	0	1
Craft and related trades worker	10256	0.09	0.28	0	1

Plant and machine operator or assembler	10256	0.05	0.22	0	1
Elementartary occupation	10256	0.08	0.28	0	1
Armed forces	10256	0.00	0.06	0	1
Legislator. senior official or manager	10256	0.11	0.31	0	1
Pofessionals	10256	0.16	0.36	0	1
Male	66221	0.44	0.50	0	1
Long term disease	66041	0.51	0.50	0	1
Free time	21019	132.85	13.87	78	168
Frequency of pray					
Never	64538	47.53	0.50	0	1
Less than once a week	64538	14.05	0.35	0	1
Once a week	64538	6.83	0.25	0	1
A couple of times a week	64538	6.84	0.25	0	1
Once daily	64538	15.82	0.36	0	1
More than once daily	64538	8.93	0.28	0	1
Component A variables					
(Log)Income	65553	10.06	1.04	0.52	16.12
Years of education	66221	11.11	4.30	0	25
Self-assessed life expectancy	58711	63.34	29.77	0	100
Self-assessed health status					
Poor	66035	0.11	0.31	0	1
Fair	66035	0.27	0.44	0	1
Good	66035	0.37	0.48	0	1
Vey good	66035	0.17	0.38	0	1
Excellent	66035	0.08	0.27	0	1
Component B variables					
EQI Corruption Index NUTS2	32066	0.32	0.72	-1.69	1.81
EQI Impartiality Index NUTS2	32066	0.19	0.79	-1.30	2.07
EQI Quality Index NUTS2	32066	0.28	0.65	-1.13	1.72
Economic Freedom Index NUTS0	63622	70.62	5.10	60.60	81.00
Component C variables					
Voluntary and charity work	64783	0.18	0.38	0	1
Sport and social club	64783	0.30	0.46	0	1
Political activities	64783	0.06	0.24	0	1
Give help	45116	0.29	0.45	0	1
Give gift (250.00€ or more)	44606	0.29	0.46	0	1
Have children	45131	0.89	0.32	0	1
Generative components					
Component A	65979	6.08	1.24	1.48	9.56
Component B	32066	5.47	0.73	3.81	6.90
Component C	44315	0.34	0.20	0	1
Locus of control variables					
Age prevents from doing things	64437	2.32	1.05	1	4
Out of control	64030	2.09	0.99	1	4

Left out of things	64244	1.70	0.91	1	4
Family responsibilities prevent	64403	1.83	0.96	1	4
Shortage of money	64425	2.28	1.12	1	4
Do what you want	64317	3.25	0.92	1	4
Looking forward	64110	3.45	0.86	1	4
Look back with happiness	64153	3.40	0.76	1	4
Feel full of energy	64442	3.17	0.87	1	4
Feel full of opportunity	63834	3.14	0.88	1	4
Future looks good	63577	3.08	0.91	1	4
External LoC index	64259	2.04	0.65	1	4

Figure 1 Panel A. Factor analysis. Screenplot of eigenvalues

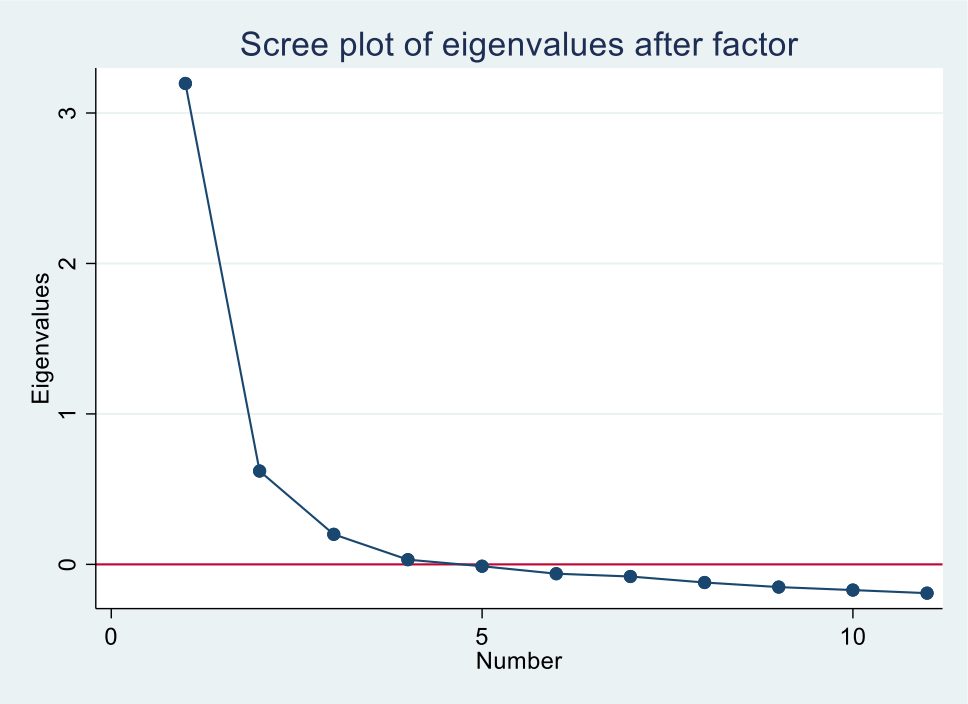

Figure 1 Panel B. Factor analysis. Factor loadings

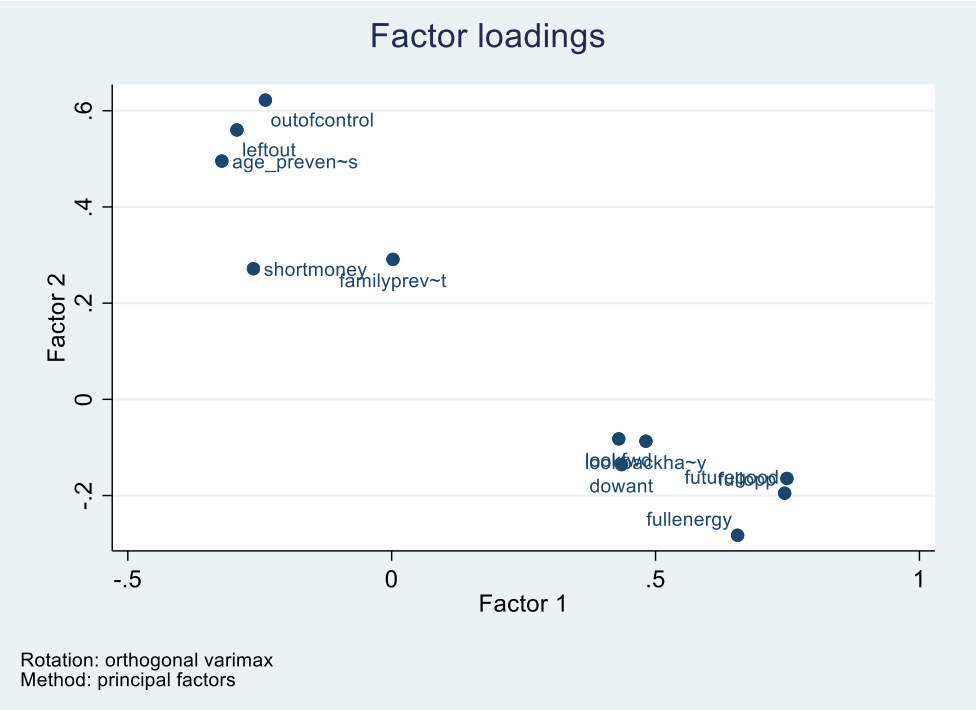

Table 3.1 The determinants of subjective wellbeing. The role of generativity components (dependent variable: life sense)

	(1)	(2)	(3)	(4)	(5)
Component A	0.496***	0.515***	0.519***	0.522***	0.472***
	(0.026)	(0.027)	(0.028)	(0.028)	(0.029)
Component B	0.195	0.194	0.141	0.141	0.122
	(0.143)	(0.143)	(0.144)	(0.145)	(0.148)
Component C	1.274***	1.114***	1.232***	1.206***	1.272***
	(0.138)	(0.157)	(0.163)	(0.164)	(0.168)
DummyHighCLowA		0.190**	0.224**	0.220**	0.197**
		(0.092)	(0.093)	(0.094)	(0.096)
DummyHighCLowB			-0.348***	-0.357***	-0.328**
			(0.124)	(0.125)	(0.127)
Frequency of pray				0.069***	0.081***
				(0.015)	(0.015)
External LoC					-0.451***
					(0.036)
Male	-0.172***	-0.175***	-0.177***	-0.129**	-0.115**
	(0.051)	(0.051)	(0.051)	(0.052)	(0.054)
Employed	0.415*	0.415*	0.425*	0.440*	0.460*
	(0.246)	(0.246)	(0.246)	(0.247)	(0.251)
Unemployed	-0.209	-0.211	-0.201	-0.205	-0.136
	(0.264)	(0.265)	(0.264)	(0.265)	(0.270)
Retired	0.011	0.008	0.021	0.035	0.071
	(0.246)	(0.246)	(0.246)	(0.247)	(0.251)
Sick or disabled	-0.357	-0.360	-0.351	-0.349	-0.206

	(0.261)	(0.261)	(0.261)	(0.262)	(0.266)
Homemaker	-0.027	-0.028	-0.014	-0.035	0.029
	(0.259)	(0.259)	(0.259)	(0.260)	(0.265)
Married	0.567***	0.567***	0.560***	0.588***	0.459**
	(0.175)	(0.175)	(0.175)	(0.176)	(0.183)
Never married	0.046	0.040	0.048	0.069	-0.036
	(0.190)	(0.190)	(0.190)	(0.191)	(0.199)
Registered partnership	0.514*	0.515*	0.515*	0.558**	0.422
	(0.266)	(0.266)	(0.266)	(0.267)	(0.274)
Divorced	-0.089	-0.087	-0.094	-0.050	-0.191
	(0.183)	(0.183)	(0.183)	(0.184)	(0.191)
Widowed	0.194	0.196	0.191	0.206	0.067
	(0.183)	(0.183)	(0.183)	(0.184)	(0.191)
Long-term illness	-0.017	-0.017	-0.016	-0.023	0.041
	(0.054)	(0.054)	(0.054)	(0.054)	(0.056)
Log GDP per inhabitant	-0.122	-0.130	-0.129	-0.148	-0.073
	(0.105)	(0.105)	(0.105)	(0.105)	(0.108)
Unemployment rates (15 - 74)	0.004	0.004	0.004	0.004	0.008
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
% of early leavers from educ. & train. (18 - 24)	-0.002	-0.002	-0.001	0.001	0.001
	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)
Cut 1	-0.497	-0.513	-0.720	-0.667	-0.160
	(1.453)	(1.453)	(1.453)	(1.455)	(1.495)
Cut 2	0.968	0.953	0.746	0.797	1332
	(1.452)	(1.452)	(1.452)	(1.454)	(1.494)
Cut 3	2.660*	2.648*	2.440*	2.495*	3.071**
	(1.452)	(1.453)	(1.453)	(1.455)	(1.494)
Age dummies	Yes	Yes	Yes	Yes	Yes
Dummy countries	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.117	0.117	0.117	0.119	0.131
No. of Observations	10390	10390	10390	10342	10043

Omitted benchmarks: "50-55" age-class , separated, other job.

Table 3.2 The determinants of subjective wellbeing. The role of generativity components. Marginal effects (dependent variable: life sense)

Average marginal effects

Model VCE : OIM

Expression : Pr(lifemeaning==4), predict(outcome(4))

Delta-method

	dy/dx	Std. Err.	z	P>z	[95% Conf.	Interval]
Component A	0.072	0.004	17.080	0.000	0.064	0.081
Component B	0.019	0.023	0.830	0.408	-0.026	0.063
Component C	0.195	0.026	7.630	0.000	0.145	0.245
DummyHighCLowA	0.030	0.015	2.060	0.039	0.002	0.059
DummyHighCLowB	-0.050	0.019	-2.580	0.010	-0.088	-0.012

External LoC	-0.069	0.005	-12.900	0.000	-0.080	-0.059

Table 4.1 The determinants of subjective wellbeing. The role of generativity components (dependent variable: life satisfaction)

	(1)	(2)	(3)	(4)	(5)
Component A	0.595***	0.627***	0.628***	0.629***	0.551***
	(0.020)	(0.021)	(0.021)	(0.021)	(0.022)
Component B	0.533***	0.532***	0.521***	0.523***	0.518***
	(0.111)	(0.111)	(0.112)	(0.112)	(0.114)
Component C	0.569***	0.405***	0.421***	0.411***	0.591***
	(0.094)	(0.102)	(0.104)	(0.105)	(0.107)
DummyHighCLowA		0.285***	0.291***	0.294***	0.255***
		(0.069)	(0.070)	(0.070)	(0.072)
DummyHighCLowB			-0.073	-0.072	-0.048
			(0.100)	(0.101)	(0.103)
Frequency of pray				0.031***	0.048***
				(0.011)	(0.011)
External LoC					-0.705***
					(0.029)
Male	-0.097***	-0.101***	-0.102***	-0.079**	-0.100***
	(0.037)	(0.037)	(0.037)	(0.038)	(0.039)
Employed	0.319*	0.317*	0.319*	0.306*	0.280
	(0.183)	(0.183)	(0.183)	(0.186)	(0.190)
Unemployed	-0.169	-0.171	-0.168	-0.185	-0.119
	(0.204)	(0.204)	(0.204)	(0.206)	(0.211)
Retired	0.208	0.204	0.207	0.201	0.153
	(0.185)	(0.185)	(0.185)	(0.187)	(0.192)
Sick or disabled	-0.292	-0.292	-0.290	-0.311	-0.189
	(0.203)	(0.203)	(0.203)	(0.205)	(0.210)
Homemaker	0.347*	0.349*	0.352*	0.330*	0.291
	(0.196)	(0.196)	(0.196)	(0.198)	(0.202)
Married	0.935***	0.936***	0.934***	0.929***	0.903***
	(0.141)	(0.141)	(0.141)	(0.143)	(0.147)
Never married	0.418***	0.421***	0.422***	0.410***	0.390**
	(0.154)	(0.154)	(0.154)	(0.155)	(0.159)
Registered partnership	0.724***	0.728***	0.727***	0.734***	0.735***
	(0.194)	(0.194)	(0.194)	(0.195)	(0.200)
Divorced	0.325**	0.329**	0.328**	0.330**	0.284*
	(0.147)	(0.148)	(0.148)	(0.149)	(0.153)
Widowed	0.507***	0.511***	0.509***	0.499***	0.413***
	(0.148)	(0.149)	(0.149)	(0.150)	(0.154)
Long-term illness	-0.145***	-0.145***	-0.144***	-0.145***	-0.060
	(0.039)	(0.039)	(0.039)	(0.039)	(0.040)
Log GDP per inhabitant	0.071	0.059	0.059	0.054	0.155*
	(0.081)	(0.081)	(0.081)	(0.081)	(0.083)
Unemployment rates (15 - 74)	-0.018	-0.018	-0.018	-0.017	-0.009

	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
% of early leavers from educ. & train. (18 - 24)	0.036***	0.035***	0.036***	0.036***	0.035***
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
cut1	3.217***	3.239***	3.190***	3.234***	4.036***
	(1.134)	(1.134)	(1.136)	(1.139)	(1.162)
cut2	3.709***	3.731***	3.682***	3.726***	4.543***
	(1.131)	(1.131)	(1.133)	(1.136)	(1.159)
cut3	4.221***	4.243***	4.194***	4.238***	5.019***
	(1.129)	(1.129)	(1.131)	(1.135)	(1.158)
cut4	4.858***	4.882***	4.833***	4.877***	5.707***
	(1.128)	(1.128)	(1.130)	(1.133)	(1.157)
cut5	5.416***	5.441***	5.392***	5.434***	6.298***
	(1.127)	(1.127)	(1.129)	(1.133)	(1.156)
cut6	6.807***	6.837***	6.788***	6.827***	7.723***
	(1.128)	(1.127)	(1.130)	(1.133)	(1.156)
cut7	7.305***	7.337***	7.287***	7.328***	8.244***
	(1.128)	(1.128)	(1.130)	(1.133)	(1.157)
cut8	8.302***	8.336***	8.286***	8.323***	9.291***
	(1.128)	(1.128)	(1.130)	(1.134)	(1.157)
cut9	9.977***	10.010***	9.961***	10.000***	11.028***
	(1.130)	(1.130)	(1.132)	(1.135)	(1.159)
cut10	10.981***	11.014***	10.965***	11.005***	12.071***
	(1.130)	(1.130)	(1.132)	(1.136)	(1.159)
Age dummies	Yes	Yes	Yes	Yes	Yes
Dummy countries	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.079	0.079	0.079	0.079	0.096
No. of Observations	10440	10440	10440	10389	10052

.Omitted benchmarks: "50-55" age-class , separated, other job

Table 4.2. The determinants of subjective wellbeing. The role of generativity components. Marginal effects (dependent variable: life satisfaction)

Average marginal effects

Model VCE : OIM

Expression : Pr(lifesat==10), predict(outcome(10))

Delta-method

	dy/dx	Std. Err.	z	P>z	[95% Conf.	Interval]
Component A	0.066	0.003	24.260	0.000	0.061	0.072
Component B	0.062	0.014	4.520	0.000	0.035	0.089
Component C	0.071	0.013	5.530	0.000	0.046	0.096
DummyHighCLowA	0.031	0.009	3.560	0.000	0.014	0.048
DummyHighCLowB	-0.006	0.012	-0.470	0.639	-0.030	0.018
External LoC	-0.085	0.004	-23.530	0.000	-0.092	-0.078

Table 4.3 The determinants of subjective wellbeing. The role of generativity components. Difference significance (4) Vs (5) (dependent variable: life satisfaction)

Test difference significance of component C coefficients
Model column (4) - Model column (5) = 0
chi2(1) = 30.69
Prob > chi2 = 0.0000

Table 5. The determinants of subjective wellbeing. The role of generativity jobs (dependent variable: life sense).

	(1)	(2)	(3)	(4)	(5)
Component A	0.496***	0.519***	0.493***	0.486***	0.424***
	(0.026)	(0.028)	(0.057)	(0.057)	(0.060)
Component B	0.195	0.141	0.101	0.147	0.204
	(0.143)	(0.144)	(0.296)	(0.297)	(0.301)
Component C	1.274***	1.232***	1.262***	1.257***	1.219***
	(0.138)	(0.163)	(0.286)	(0.287)	(0.293)
DummyHighCLowA		0.224**	0.320	0.320	0.355*
		(0.093)	(0.199)	(0.200)	(0.205)
DummyHighCLowB		-0.348***	-0.668***	-0.653***	-0.588**
		(0.124)	(0.237)	(0.238)	(0.243)
Mid generative job			0.156	0.154	0.214
			(0.139)	(0.139)	(0.142)
High generative job			0.352**	0.333**	0.456***
			(0.150)	(0.150)	(0.154)
Freetime				-0.010**	-0.011***
				(0.004)	(0.004)
Frequency of pray					0.079**
					(0.032)
External LoC					-0.499***
					(0.073)
Age dummies	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
Dummy countries	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.117	0.117	0.105	0.106	0.117
No. of Observations	10390	10390	3798	3777	3712

Table 6. The determinants of subjective wellbeing. The role of generativity jobs (dependent variable: life satisfaction).

	(1)	(2)	(3)	(4)	(5)
Component A	0.595***	0.628***	0.639***	0.632***	0.542***
	(0.020)	(0.021)	(0.039)	(0.039)	(0.040)
Component B	0.533***	0.521***	0.387**	0.410**	0.467**

	(0.111)	(0.112)	(0.196)	(0.196)	(0.200)
Component C	0.569***	0.421***	0.477***	0.473***	0.709***
	(0.094)	(0.104)	(0.161)	(0.162)	(0.165)
DummyHighCLowA		0.291***	0.156	0.145	0.109
		(0.070)	(0.135)	(0.136)	(0.138)
DummyHighCLowB		-0.073	-0.311*	-0.298*	-0.244
		(0.100)	(0.178)	(0.178)	(0.182)
Mid generative job			0.128	0.139	0.197*
			(0.106)	(0.107)	(0.108)
High generative job			0.201*	0.199*	0.303***
			(0.109)	(0.109)	(0.111)
Freetime				-0.003	-0.003
				(0.003)	(0.003)
Frequency of pray					0.041**
					(0.020)
External LoC					-0.817***
					(0.051)
Age dummies	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
Dummy countries	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.079	0.079	0.076	0.075	0.096
No. of Observation	10440	10440	3810	3789	3717

Table 7.1 The determinants of subjective wellbeing. The role of generativity components. Bootstrap estimation (dependent variable: life sense).

	(1)	(2)	(3)	(4)	(5)
Component A	0.496***	0.515***	0.519***	0.522***	0.472***
	(0.028)	(0.029)	(0.030)	(0.031)	(0.030)
Component B	0.195	0.194	0.141	0.141	0.122
	(0.140)	(0.146)	(0.142)	(0.147)	(0.150)
Component C	1.274***	1.114***	1.232***	1.206***	1.272***
	(0.141)	(0.165)	(0.168)	(0.173)	(0.170)
DummyHighCLowA		0.190**	0.224**	0.220**	0.197**
		(0.096)	(0.093)	(0.101)	(0.092)
DummyHighCLowB			-0.348***	-0.357***	-0.328***
			(0.129)	(0.130)	(0.121)
Frequency of pray				0.069***	0.081***
				(0.015)	(0.015)
External LoC					-0.451***
					(0.039)
Age dummies	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
Dummy countries	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.117	0.117	0.117	0.119	0.131

Repetitions	500	500	500	500	500
No. of Observation	10390	10390	10390	10342	10043

Table 7.2 The determinants of subjective wellbeing. The role of generativity components. Bootstrap estimation (dependent variable: life satisfaction).

	(1)	(2)	(3)	(4)	(5)
Component A	0.595***	0.627***	0.628***	0.629***	0.551***
	(0.020)	(0.023)	(0.022)	(0.023)	(0.024)
Component B	0.533***	0.532***	0.521***	0.523***	0.518***
	(0.117)	(0.116)	(0.112)	(0.114)	(0.118)
Component C	0.569***	0.405***	0.421***	0.411***	0.591***
	(0.092)	(0.099)	(0.105)	(0.104)	(0.096)
DummyHighCLowA		0.285***	0.291***	0.294***	0.255***
		(0.071)	(0.072)	(0.074)	(0.072)
DummyHighCLowB			-0.073	-0.072	-0.048
			(0.110)	(0.101)	(0.107)
Frequency of pray				0.031***	0.048***
				(0.011)	(0.011)
External LoC					-0.705***
					(0.031)
Age dummies	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
Dummy countries	Yes	Yes	Yes	Yes	Yes
Repetitions	500	500	500	500	500
Adj. R-squared	0.079	0.079	0.079	0.079	0.096
No. of Observation	10440	10440	10440	10389	10052

Table 8.1 Sensitivity of our main findings to omission of sample countries (dependent variable: life sense)

Omitted Country	Component C coefficients	DFBETA
Germany	1.137***	0.681
Sweden	1.151***	0.663
Netherlands	1.368***	-0.538
Spain	1.284***	-0.070
Italy	1.206***	0.376
France	1.236***	0.215
Denmark	1.319***	-0.262
Belgium	1.393***	-0.671
Czech Republic	1.287***	-0.084

Table 8.2 Sensitivity of our main findings to omission of sample countries (dependent variable: life satisfaction)

Omitted Country	Component C coefficients	DFBETA
Germany	0.328**	2.030
Sweden	0.570***	0.183
Netherlands	0.600***	-0.072
Spain	0.594***	-0.022
Italy	0.629***	-0.343
France	0.596***	-0.041
Denmark	0.680***	-0.765
Belgium	0.607***	-0.145
Czech Republic	0.659***	-0.610

Table 8.3 Sensitivity of our main findings to gender omission (dependent variable: life sense)

Omitted Country	Component C coefficients	DFBETA
Full sample	1.267***	
Only male	1.504***	-0.971
Only female	1.055***	0.905

Table 8.4 Sensitivity of our main findings to gender omission (dependent variable: life satisfaction)

Omitted Country	Component C coefficients	DFBETA
Full sample	0.584***	
Only male	0.936***	-2.236
Only female	0.332**	1.720

Table 9 Two-sample t test with equal variances . Family responsibilities prevent from doing things, by high and low C

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
Low C	29504	1.754	0.006	0.965	1.743	1.765
High C	14366	1.937	0.008	0.952	1.922	1.953
combined	43870	1.814	0.005	0.964	1.805	1.823
diff		-0.184	0.010		-0.203	-0.165
diff = mean(0) - mean(1)						t = -18.803
Ho: diff = 0					degrees of freedom = 43868	
Ha: diff < 0			Ha: diff != 0			Ha: diff > 0
Pr(T < t) = 0.0000			Pr(T > t) = 0.0000			Pr(T > t) = 1.0000