NEET is unsustainable for the environment.

A mixed-method comparative study on NEETs and their perceived environmental responsibility.

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Abstract

The aim of this study is to explore whether young people propensity to take responsibility for the environment is negatively affected by living in a condition of social exclusion, such that of NEETs (i.e. Not in Education, Employment or Training). By adopting a mixed-method comparative approach, we implemented both macro and micro level analyses. At the macro level we used the fuzzy-set Qualitative Comparative Analysis (fs-QCA), through which we compared European countries to find alternative configurations of NEETs condition leading to the presence (or absence) of high levels of perceived individual environmental responsibility. At the micro level, we implemented a mediation model by using GSEM estimation, to find whether the association between the NEET condition and the level of perceived environmental responsibility is mediated by the individual happiness. Fs-QCA results are integrated at the micro level to test context related variation. Finally, a more detailed focus is provided on the Italian case: Italy is the country with the highest proportion of NEETs and with one of the lowest level of young people perception of being responsible for the environment. Data come from the 2016 European Social Survey, the 2016 Eurofound report and the 2018 Italian Youth Report. We found that the presence of more vulnerable NEETs is associated with lower levels of perceived environmental responsibility. At the micro level, the hypothesized relationship is significant only in some contexts. In Italy, in particular, it seems that

being NEET leads young people to attribute environmental responsibility to the institutions than to the single individual, and it seems due to their low happiness.

Keywords: NEET, environment, mixed method, QCA, GSEM

1. Introduction

Sustainability has been defined by the UN (1987) as the satisfaction of the needs of the present generations without adversely affecting the needs satisfaction of the future generations. Following this definition, the UN identifies three spheres in which sustainability should be guaranteed in order to assure satisfying living conditions for the next generations, which are the environmental protection, the economic growth and the social inclusion. Our interest is in the relationship between the environmental protection and the social inclusion goals. In particular, we claim that two of the main issues of the today political debate in the European Union are deeply related: those regarding the living conditions of the young population and the future of the environmental crisis. More specifically, we want to test whether the sense of individual responsibility for the environment among young people is associated with the level of satisfaction with their life conditions. We focus on a widespread condition among young population in Europe – and in Italy in particular –, which is that of NEET, i.e. *Not (engaged) in Education, Employment or Training*. This condition is typically associated with low life satisfaction, low happiness and low optimism (Goldman Mellor et al. 2016, Healy and Côté 2001, Shah et al. 2019, Tolgensbakk et al. 2017), while it leads to high risk of social exclusion, poverty, low participation and low perception of self-responsibility (Alfieri et al. 2015; Bynner and Parsons 2002, France 1998, Ruesga-Benito et al, 2018). We claim that NEET condition is detrimental for both young people's happiness and their sense of responsibility towards the environment. In particular, being unhappy because of a general dissatisfaction with the living conditions is expected to mediate the relationship between being NEET and the willingness to change habits – because of feeling individual responsibility – for environmental reasons.

Some studies have specifically addressed the issue of linking unemployment and pro-environmental attitudes and behaviours. While significant relationship has been found at the macro level (Kahn and Kotchen 2011), empirical evidences are quite mixed at the micro level (Meyer 2016, Torgler and García-Valiñas 2007, Torgler et al. 2012, Witzke and Urfei 2001, Veisten et al. 2004). However, these studies lack of some additional elements to disentangle the relationship. First, the traditional definition of NEET is very limited: it does not take into account nor the different levels of vulnerability that different types of NEETs can experience, neither the persistence or transiency of their condition. We expect that, at the country level, different configurations of types of NEETs, and not the total amount of NEETs, can be precondition for the presence or the absence of high (or low)

degree of sense of individual environmental responsibility in the young population. At the same time, at the micro level, we hypothesize that, if there is a significant relationship between being NEET and the perceived individual responsibility for the environment, this depends on the broaden context – which is the prevalent condition among peers? – and it is mediated by the level of happiness of the individual. Where the NEET condition reduces the happiness of the individual, this has a negative effect on the sense of individual environmental responsibility. In this case, in fact, especially if the condition of high vulnerability among NEETs is widespread in the country, the individual would give more responsibility to the institutions and other authorities – which are seen as responsible also for her condition of NEET - and less responsibility to herself.

In order to test our hypotheses, we use the European Social Survey special module on the environment (2016), the data elaborated in the 2016 Eurofound Report, the Eurostat database and the 2018 Italian Youth Report special module on sustainability. While we adopt a cross-country comparative perspective, we provide also with an in-sight into the Italian case. Italy, in fact, is the country with the highest proportion of NEETs in the European context (28.9 in 2018 for young people age 20-34, compared with the 16.5 for the EU-28) and the only country in the Western Europe to show low levels of perceived individual responsibility for the environment among young people. To carry this study we use a mixed-method approach. For the macro-level analysis we rely on a fuzzy-set Qualitative Comparative Analysis, (fsQCA) with the aim of finding sufficient alternative configurations of types of NEETs across countries for high or low degree of perceived individual environmental responsibility among young people. In a second step, at the micro level, we perform a mediation model using the Generalized Structural Equation Model approach, to test whether the relationship between the NEET condition and the level of perceived responsibility for the environment is mediated by the individual happiness. Cluster of countries derived by the fsQCA solutions are considered to test the structural invariance of the mediation model across different contexts and groups. The strength of our approach derived by the fact that the two methods are not only complementary, offering two alternative perspectives on the same phenomena, but also integrated, as the QCA results are included in the statistical analysis.

2. Literature review

The urgency of a collective and individual action for improving the sustainability of our ways of living has become evident during the last decades with the strong economic crisis of the 2008 and the increasing awareness about the dramatic consequences of the climate change.

Climate change is clearly influencing many life spheres in our societies, such as public health, food and water security and migration processes, and its consequences are quite transversal worldwide. However, governments and corporations are often not prompt to adopt effective strategies to reduce the causes of climate change. At the same time, aggregate individual action – as citizens and consumers – has been held up as the main responsible for many negative environmental outcomes, such as air pollution and waste emergency (Fahlquist 2008). In the public debate, this has risen questions about whether the responsibility for protecting the environment and reducing the consequences of the climate change in the future, should be institutional or individual. Some scholars have stressed the central role of the individual action and responsibility for environmental protection (Sassatelli 2006, Micheletti 2003, Jacobsen and Dulsrud 2007). Others, instead, argue that institutional indifference reduce the efficient distribution of environmental responsibilities (e.g. Fahlquist, 2009). In other words, if institutions do no act to promote environmental sustainability, individuals may tend to perceive their single actions as indifferent for the environment protection. This happens because individuals are strongly influenced by the cultural, social, political and economic context in which they live: policy measures can promote environmental friendly behaviours making them less costly and easier to adopt, with a consequent diffusion of pro-environment attitudes and values in the society (Aceleanu et al. 2015). Therefore, institutional responsibility – and the consequent intervention – is crucial to struggle the widespread perception that individual contribution to environmental sustainability is marginal and ineffective. People, in fact, tend to underestimate their role as "pollution sources" and causative factor in environmental degradation (Babcock, 2009). This perception leads individuals to resist changing their habits and adopting environmental friendly behaviours. The resistance is obviously stronger when individuals perceive the behavioural change as costly or generally inconvenient (Babcock, 2009).

Another mechanism leading people to underestimate the relevance of the individual environmental responsibility is the existence of competitive priorities and needs. At the institutional and corporates level, among the three pillars of the sustainable development – i.e. economy, society and environment – economic interests have traditionally dominated over society and environment (Giddings et al. 2002). Similarly, at the individual level, economic needs tend to be prioritized by the individual: according to Becchetti and Conzo's study (2018) being unsatisfied with the own economic well-being, in fact, has the strongest negative effect on the individual's well-being if compared with other 11 well-being domains, social relationship and environment among them. Other studies highlight how social integration and social participation can represent the main channel to convey the importance of the individual involvement in pro-environmental behaviours (France, 1998). The idea is that there is a strong link between rights and responsibilities the individual takes towards the community. Pro-

environmental behaviours, in this sense, are an example of private provision of public goods (Clark et al, 2003). In other words, people can be invited to feel responsible for their community well-being only if they feel their rights have been guaranteed. This is especially important in the phase of transition from school to work, and from the family household to the independent living (Jones & Wallace, 1992; Sironi & Rosina, 2015). More difficult for young people to move into autonomous adulthood, more they feel to be marginalized, and less probably they will engage into active citizenship. If rights can influence the way young people take social responsibilities – and environmental responsibilities are among them – the "right to be employed" has a strong predictive power in that. Long-term unemployment and youth unemployment in particular violate young people expectations about "how thinks should be". It has been found that young people feel no reasons to consider themselves responsible for the community because of their exclusion (France, 1998).

Therefore, previous empirical evidences suggest that there is a link between youth employment conditions - and so their social inclusion - and their involvement in pro-environmental behaviours. This relationship is of great interest in a context, such the European one, where the 2008 economic crisis has increased the risk of social exclusion of young people. The proportion of NEETs - i.e. young people "Not in Employment, Education or Training" – has increased in most of the European countries in the last decade, and it has reached one of the highest level in Italy (about 28.9% in 2018 for young people aged 20-34; Source: Eurostat). This condition is an indicator of vulnerability in terms of labour market participation and social exclusion, and it is associated with a more difficult transition to autonomy from the family of origin and adult responsibilities. However, this broad definition has incurred in many critics, because the NEET condition is more variegated than this. According to the 2016 Eurofound Report, the first great distinction is between vulnerable and non-vulnerable NEETs. Non-vulnerable NEETs are those with high social, cultural and human capital and they do not suffer the risk of being marginalized. On the contrary, vulnerable NEETs do not have the "right" characteristics that make them attractive for the labour market. Moreover, usually the definition of NEET is based on the occupational condition of the individual during the last week. However, young people can stay in that condition for short-term or for long-term, and this cannot be disentangled by the traditional definition of NEET. Because of this heterogeneity, Eurofound (2012) proposed a 7-classes classification of the NEET condition. These categories are: [1] the re-entrants (i.e. those that are soon re-entering into the labour market); [2] the short-term unemployed; [3] the long-term unemployed; [4] the unavailable due to illness and disability; [5] the unavailable due to family responsibilities; [6] the discouraged workers (i.e. those that are no longer looking for a job because discouraged; this is the most vulnerable category); and the residual category of [7] the other inactive, which can hardly being classified across countries. While the type 1 and 2 are typical among

the non-vulnerable NEETs, types 3, 4, 5 and 6 are more common among the vulnerable NEETs. The residual category is mixed.

As shown in the Eurofound Report, countries have different configurations of types of NEETs. This variety is a source of heterogeneity among contexts in which young people are participating. There are contexts in which social exclusion is high because NEET vulnerability is more common while in other is less. We expect a lower perception of individual environmental responsibility in this context than in the situation where non-vulnerable NEETs are common. Moreover, we expect that different configurations of NEETs would modify the relationship between being NEET and the level of perceived individual responsibility for the environment. In particular, in context with more vulnerable NEETs, being NEET might be associated with the perception of having lower chance to change one's own condition, with lower happiness and, in a broad perspective, with reduced capabilities to be effective with their action. On the contrary, this might lead NEETs to think that other authorities, such as institutions, have the responsibility for both their own life conditions, and similarly for the environmental crisis. On the other way around, in context with a higher diffusion of non-vulnerable NEETs, being NEET, independently by the kind of, does not imply a sense of inevitability of one's own condition of life. This would keep happiness higher, without affecting the individual's general perception of her own capabilities of being effective in changing the current situation.

3. Data and Method

In the first step of our study, we conducted the analysis at the macro level in order to single out specific configurations of NEETs condition in the European context that are associated with a general sense of environmental responsibility among young people, and highlight the relative importance of these attributes. Specifically, making use of set-theoretic comparative method, our aim was to find out configurations of different types of vulnerable and non-vulnerable NEETs that characterized each country, which can represent alternative paths leading to a widespread high or low sense of responsibility among young people towards the environmental issues. Eurofound, Eurostat and aggregated 2016 ESS data at the country level have been used for the aim.

In the second step, we tested the mediated relationship between young adult living conditions, happiness and perception of environmental responsibility at the micro level, through a generalized structural equation model. The aim was to estimate the mediated association between being NEET on the level of perceived individual responsibility for the environment, mediated by the individual

happiness. For this aim, we used the 2016 ESS 2016 and the 2018 Italian Youth Report ad hoc module on environmental attitudes and behaviours.

3.1. The macro level analysis: method and measures

The macro level analysis has been conducted by making use of the Qualitative Comparative Analysis (QCA) approach. QCA is the most powerful set-theoretic method to disentangle the complexity of causal relationships (Schneider and Wagemann 2012). QCA allows to test the relationship of sufficiency and necessity between a bunch of conditions and an outcome, to which cases of a specific population can belong or not. QCA works through the logical minimization of truth tables: at the end of the process, the initial configurations of empirical information are expressed in a more parsimonious but logically equivalent formulation (Schneider and Wagemann 2012: p. 9). However, differently to other set-theoretic techniques, QCA is not designed for typologies construction (which does not imply the presence of an outcome), but for causal analysis. Moreover, it does not aim to test the significance and sign of the effect of variables; instead, it identifies the role of different conditions, in terms of sufficiency and necessity, and of conditions as parts of complex configurations (*conjunctural causation*) leading to a specific outcome. QCA also accounts for *equifinality* – a plurality of configurations is equally sufficient to the outcome – and evaluates the explanatory power of each solution. QCA has also some features of the case-oriented comparative approach. The insights and the knowledge collected on each single case in the population is essential for a well-conducted QCA, from the definition of the conditions and outcome to the understanding of the results. For this reason, the number of cases included in a QCA analysis should not be large, under penalty of losing the in-depth knowledge of the cases.

QCA is a bunch of techniques: the two main versions are the crisp-set QCA (csQCA) and the fuzzy-set QCA (fsQCA). The difference between the two regards the way we define the case membership to the sets (i.e. conditions and outcome). In the csQCA, each case can be a member or a non-member of the set, in a dichotomous way (0: non-member; 1: member). In fsQCA, cases can show different degrees of belonging to each set, and the membership score can take a value in the continuum from 0 to 1, where the 0.5 value is the threshold between being more a member than non-member (from 0.5 excluded to 1) and being more a non-member than a member (from 0 to 0.5 excluded). The process through which we define the degree of membership in each condition and in the outcome sets is named calibration. In order to calibrate our conditions and outcome, we need to decide under which requirements a case fully belong (or not belong) to a set. This allows setting the criteria through which we can assign the anchors – i.e. the 0, 1 and 0.5 thresholds. This operation is extremely qualitative, because it is based on the definition of the concepts behind our conditions and outcome. In the fuzzy

set version, an ad hoc algorithm of the software calibrates the remaining values based on a log-shaped function. The calibration outcome is the truth table. The minimization of the truth table is again a software affair. The process returns three different solutions: the complex, the most parsimonious and the intermediate solution. The differences among the three regard the way in which the software treats the logical remainders in the minimization – i.e. the truth table lines for which we do not have empirical cases. The complex solution is derived by minimizing only those lines for which we have empirical correspondence in our population; the parsimonious solution, instead, include in the minimization the entire truth table; finally, the intermediate solution considers only the logical remainders satisfying some assumptions – made by the researcher – on the relationship between the presence/absence of the conditions and the presence of the outcome. The "goodness of fit" of the model can be evaluated with two parameters, i.e. *consistency* and *coverage*. In the analysis of sufficiency, consistency expresses the level to which a certain solution is sufficient in our population: the parameter is lower if there are many cases that are outliers with respect to the sufficient relationship. Consistency range from 0 to 1: a value of 0.5 means that "almost half of the empirical evidence contradicts the subset relational statement of sufficiency" (Schneider and Wagemann, 2012, p. 127). Coverage, instead is the numeric expression of the empirical importance of the sufficient solution (Schneider and Wagemann, 2012). In other words, it indicates how much of the (empirical) outcome is covered by the solution (which might be the overall solution or the single alternative configurations that form the overall solution).

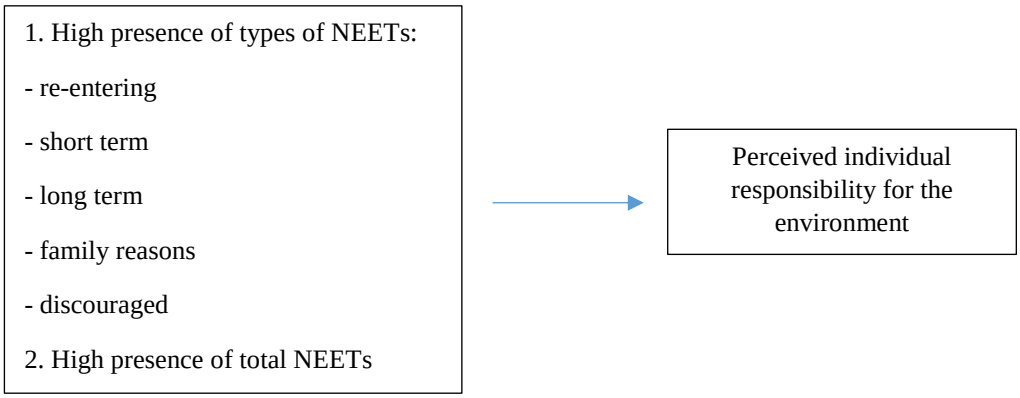
In light of the previous considerations, it is evident as QCA is well suited for mixed methods research. In particular, when combined with quantitative methods, as in our case, it enriches statistical analysis by facilitating case comparison and enlightening alternative causal paths to the same outcome.

As it has been said, by making use of fsQCA, we aim to explore the link between the presence of different types of NEETs and the high diffusion of sense of environmental responsibility among young people[1] (see Figure 1) in a sample of European countries[2].

[1] Analyses have been run on the fs/QCA3.1b software

[2] Austria, Belgium, Czech Republic, Germany, Estonia, Spain, Finland, France, UK, Hungary, Ireland, Italy, Lithuania, Netherlands, Poland, Portugal, Sweden, Slovenia

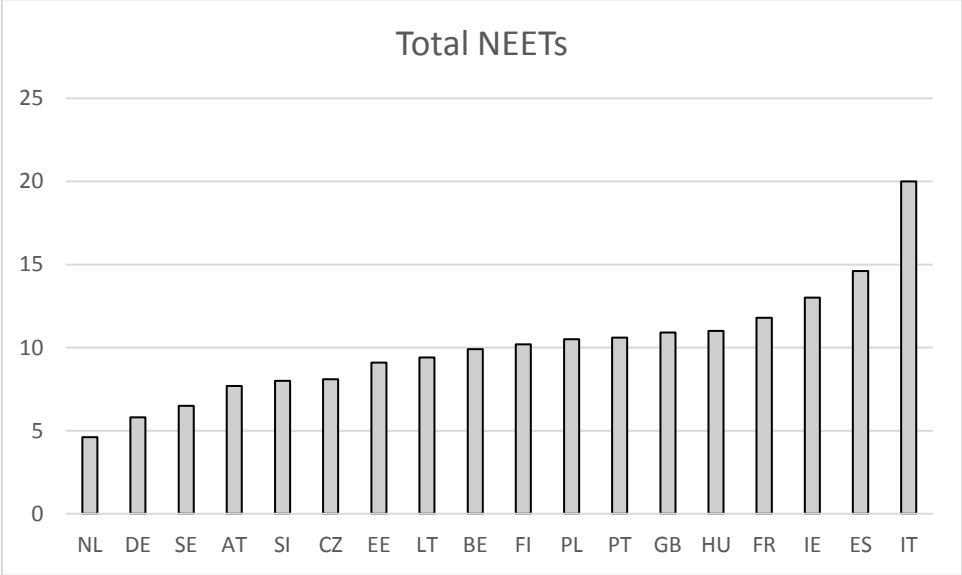
Figure 1. Model for the fuzzy set QCA



Conditions and outcome

Macro level data at the country level used in the analysis come from the Eurofound[3], Eurostat online database[4] and the 2016 ESS. For the total amount of NEETs, we rely on Eurostat definition and data for the 2016. Figure 2 shows the distribution of NEETs among the selected European countries. Italy is the country with the far highest proportion of NEETs (20%) in the 2016, followed by Spain (14.6%), while Netherland (4.6%) and Germany (5.8%) have the lowest rates.

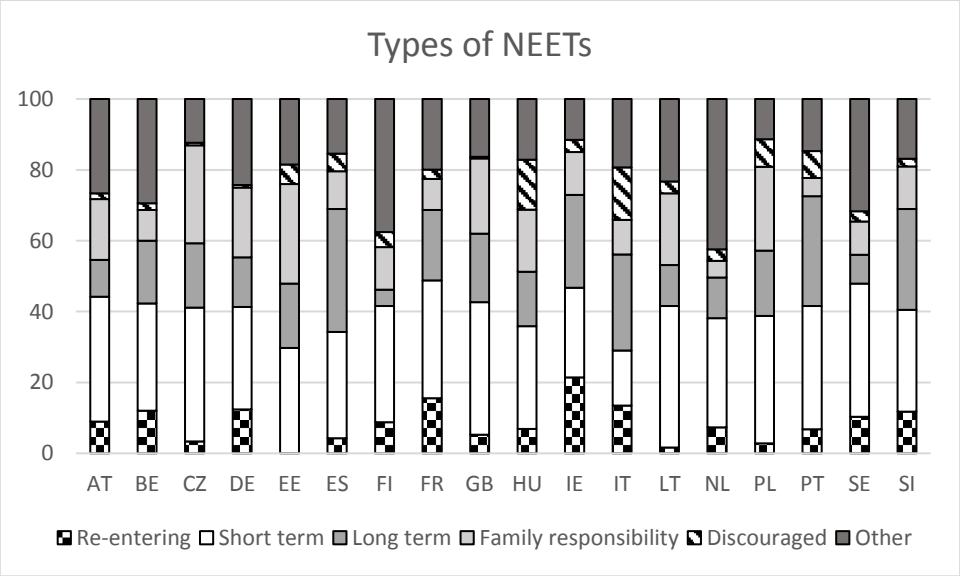
Figure 2. Proportion of NEETs (age: 15-25) in selected European countries (source: Eurofound elaboration on EU-LFS, 2013)



[3] Eurofound (2016), Exploring the diversity of NEETs, Publications Office of the European Union, Luxembourg.
[4] https://ec.europa.eu/eurostat/data/database

Regarding the different types of NEETS, we refer to the classification reported in the Eurofound report (2016). Figure 3 shows the distribution of the different types of NEETs among countries as classified by Eurofound. We decided to include in the residual category "other", corresponding to the heterogeneous group of other types of NEETs, also the very small proportion of NEETs because of illness. Italy shows the lowest proportion of non-vulnerable NEETs – i.e. re-entering and short-term – among the European countries (29%).

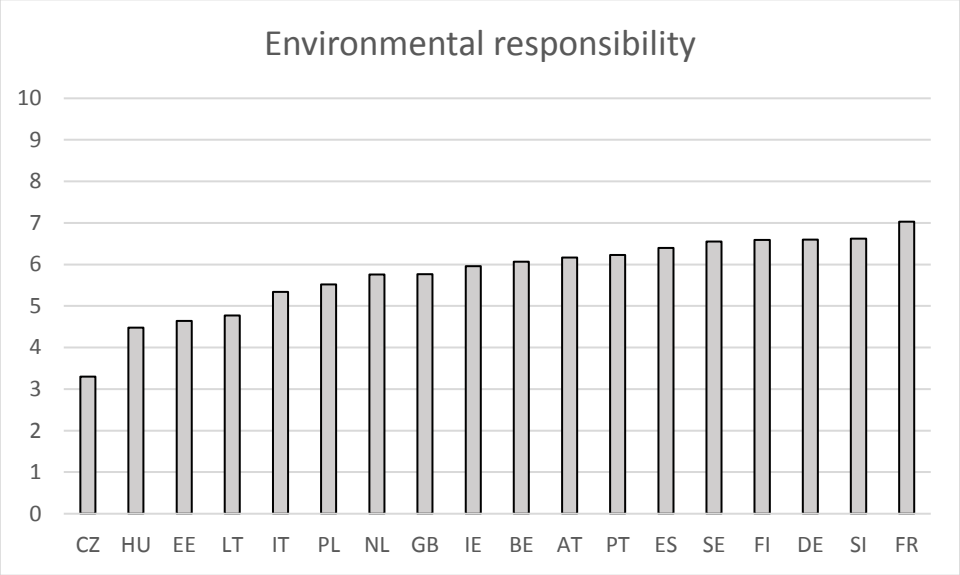
Figure 3. Proportion of different types of NEETs (age 15-25) in selected European countries (source: Eurofound elaboration on EU-LFS, 2013)



However, for this study sake, we consider only the following 5 categories: [1] Re-entering; [2] Short-term unemployed; [3] Long-term unemployed; [4] Discouraged; [5] Outside for family reasons. We excluded the residual category "Other" because of its heterogeneity, including both vulnerable and non-vulnerable NEETs in different proportion across countries. In fact, this makes difficult to interpret who is in this category and so to understand our QCA results.

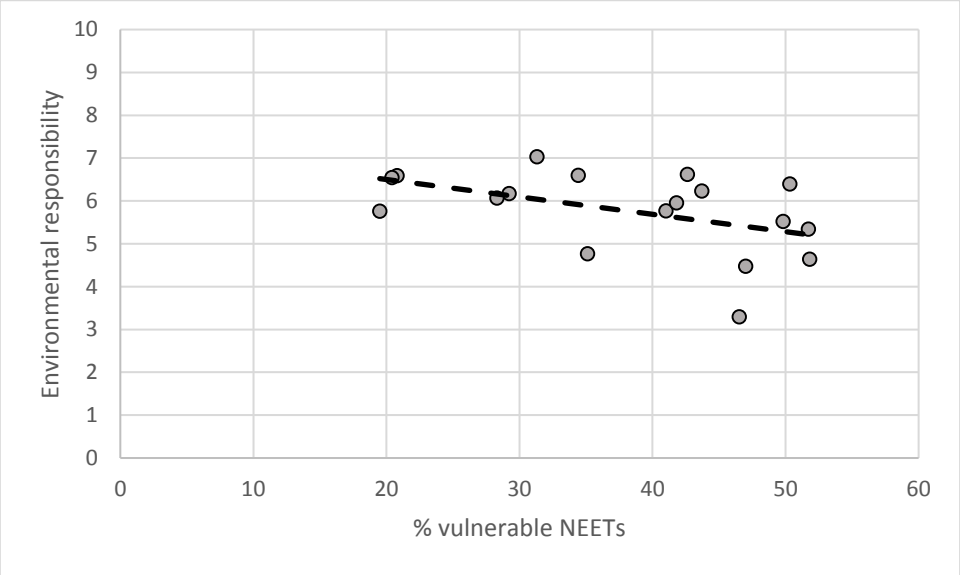
Regarding the perceived individual environmental responsibility, we take the mean level of the ESS variable "*To what extent do you feel a personal responsibility to try to reduce climate change*?", which answers scale from 0 ("*Not at all*") to 10 ("*A great deal*") in the sample of people age 15-25. Figure 4 shows the distribution of the variable across countries. Eastern European countries and Italy are those with the lowest levels, while Nordic countries, Germany, Slovenia and France show the highest.

Figure 4. Mean level of perceived environmental responsibility among the young population (age 15-25) in selected European countries (Source: our elaboration on ESS 2016 data)



Regarding the relationship of interest, Figure 5 shows that there is a negative significant relationship (at $p<0.05$) between the proportion of vulnerable NEETs in the country and the average level of perceived individual responsibility for the environment.

Figure 5. Scatter plot with tendency line for linear relationship between the proportion of vulnerable NEETs in the country and the mean level of perceived individual responsibility in the population of young people (age 15-25) in selected European countries (Source: Eurofound 2016 and ESS 2016).



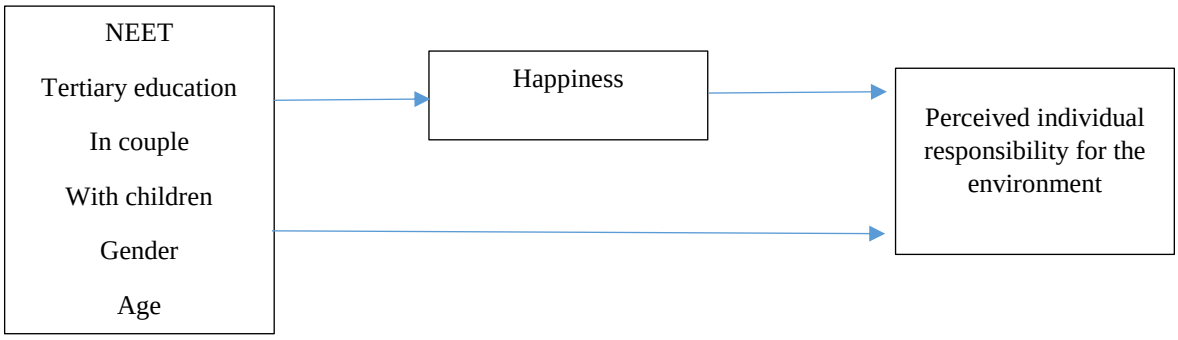
Note: $R^2 = 0.214$

3.2. The micro level analysis: method and measures

The aim of this step is to test the mediation hypothesis, which is whether the fact that NEETs have a lower perception of the individual responsibility for the environment is due to their lower level of happiness compared to their peers who work or study (see Figure 6). The relationship is going to be tested in the clusters highlighted by the fsQCA results and in the Italian context.

In order to test the expected associations, we developed a mediation model with General Structural Equation Model estimation[5], with Maximum Likelihood Estimation Method. Because we use cross-country data, we cannot avoid the endogeneity issue derived by testing the relationship between two subjective variables (i.e. happiness and the perception of one's responsibility for the environment), and the one derived by the relationship between being NEET and happiness. Therefore, results from our models should be interpreted more as associations than in causal sense, even though we can argue that, based on the existing literature, the main direction of the relationship is the one that we test. Differences among clusters of countries have been explored by running cluster-specific model and testing the invariance between couples of them.

Figure 6. The mediation model



The analyses have been conducted on two samples derived from two different surveys: the 2016 wave of the European Social Survey (ESS) and the Italian 2018 Youth Report. The ESS is a cross-national survey that has been conducted – every two years – across Europe since 2001.The survey measures the attitudes, beliefs and behaviour patterns of diverse populations in more than thirty nations. The sample is representative at the national level for the population aged 15 and over resident in the country. The individuals selection follows a random probability method at every stage. The final

[5] Estimation has been done using IBM AMOS 25.0

sample size for each country must be higher than 1500 individuals. In 2016, ESS includes an ad hoc module on "Public attitudes to climate change".

The Italian Youth Report is a national-wide Italian survey, launched in 2015 by the Toniolo Institute of Advanced Studies with the inclusion of the CARIPLO Foundation and IPSOS LTD as executive partners. The sample consists of 9,358 individuals aged between 18 and 32 years, taking under consideration the age bracket as constituting emerging adulthood. The individuals were chosen with a stratified sampling technique. The sample is a representative of the Italian youth population. The representativeness is given by a significant set of different variables (gender, age, geographical origin, education, marital status, etc.) on which the sample has been stratified. In 2018, and ad hoc module on the environment and sustainable behaviours and attitudes has been carried on. For this topic, a specific survey was conducted on a sample of 2,004 individuals, aged between 21 and 34 years.

In order to make the ESS and the Italian Youth Report samples comparable, we selected the 22-35 years old individuals in the ESS. By making use of ESS data, we explore whether there are statistically significant differences among clusters of countries, as identified by the fsQCA solutions. Then, taking advantage of an ad hoc survey with a large representative sample on a single country (i.e. the Italian Youth Report), we can explore the relationship more in depth, contextualizing the results in a specific economic, social and environmental context.

Dependent variables

In 2016 ESS, a specific question has been introduced regarding the perception of self-responsibility for environmental emergencies. In particular, it is asked "*To what extent do you feel a personal responsibility to try to reduce climate change?*" and respondents answer her level of involvement on an 11 points scale, from 0 ("*Not at all*") to 10 ("*A great deal*").

The Italian Youth Report module on sustainability has a specific focus on the environmental issue. In particular, there is a set of questions regarding the individual involvement in pro-environmental behaviours and her perception about institutional and other citizens' involvement and responsibility. Even though there is no an identical question to the one reported in the ESS questionnaire, one of them is comparable in terms of meaning. It asks whether the individual agrees with the sentence "The environment protection is the responsibility of the authorities, the individual citizen can do little" on a scale from 1 to 10. However, the question has a reversed polarity if compared to the one in ESS. In fact, it measures how much the individual attributes the environmental responsibility to the institutions instead to the single individual. Additionally, this question belongs to a Likert scale, which aims to explore the individual's perception of personal responsibility and behavioural efficacy in significantly reducing the environmental emergency. Respondents agreeing on this question

implicitly assume that their behaviours have the power to make a difference for the environment; therefore, they are prone to change their habits because they feel responsible for their consequences. The other items of the Likert scale are reported in Table 1. These items have been collapsed in a multiplicative index measuring the overall individual attitude towards her involvement in pro-environment behaviours. Both the variables – i.e. the institution vs individual responsibility for the environment – and the pro-environment attitude index are dependent variables in our analysis.

Table 1. Items of the Likert scale on the pro-environment attitude

	Items
1	The protection of the environment is the responsibility of the authorities, the individual citizen can do little
2	I am willing to change habits to be more respectful of the environment
3	I try to minimize waste (eg of water, light, food, plastic, etc.)
4	I try to separate waste carefully
5	In words they are all respectful of the environment then in fact they are not at all
6	Even small gestures are important to respect the environment
7	Generally I prefer to buy the products of the companies that operate safeguarding the environment

Predictors

According to our hypothesis, the level of which the individual perceives her behaviours as affecting the environment depends on their life conditions and their – consequent – level of happiness. Both the ESS and the Youth Report ask the individual's level of happiness. In the ESS, the question ask "*Taking all things together, how happy would you say you are?*" and respondents answer on a scale ranging from 0 (extremely unhappy) to 10 (extremely happy). In the Youth Report the same question is asked as "*How happy you are with a vote from 1 (not at all happy) to 10 (very happy)*".

In order to define the NEET condition in both the datasets, we create a dummy variable which takes value 1 in case the individual is not working, not actively looking for a job and not in training or education during the last 7 days.

Other control variables that describe the individual's life condition are marital status - that in this case is a dummy for individuals living in couple outside the family of origin – the presence of children – here again is a dummy variable – whether the individual has achieved or not the tertiary education, and age and gender of the respondent[6].

4. Results

[6] Also the parents' level of education has been initially considered in the analysis as a proxy for the family socio-economic status (SES) instead of the income level, which is not present in the Italian Youth Report. However, nor the family SES is significantly related with our dependent variables, neither the inclusion of the variable in the models modifies the effect of the other predictors.

4.1. Results from QCA

Unpacking NEETs' conditions, we analyse whether some combinations of presence (or absence) of high proportion of vulnerable or invulnerable types of NEETs are sufficient conditions for the presence (or absence) of a widespread sense of individual responsibility for the environment among young people. Table 2 reports the empirical information for the six conditions - i.e. the five types of NEETs and the proportion of NEETs in the sample (source: Eurofound 2016) – and the outcome – i.e. the mean level of individual environmental responsibility in the sample (source: ESS 2016).

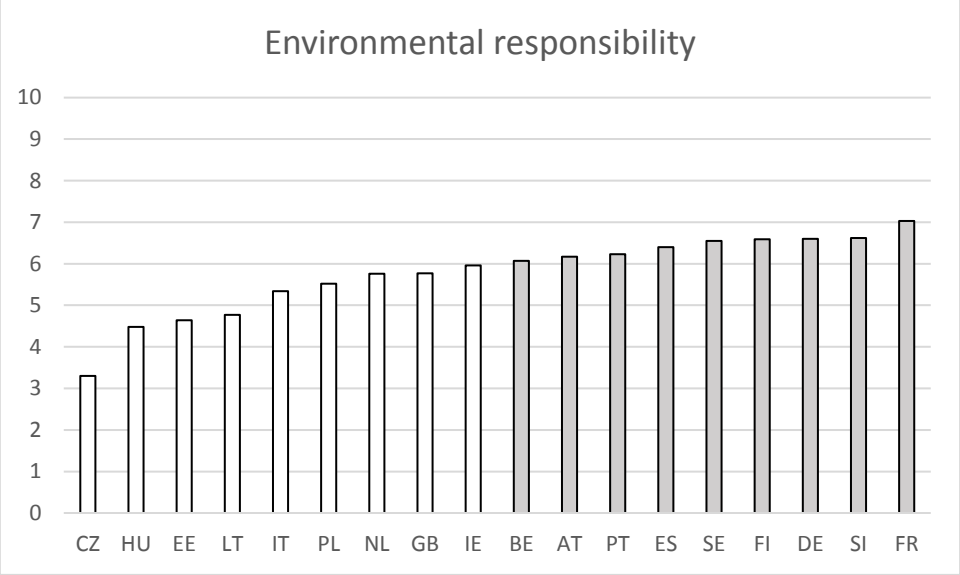
Table 2. Empirical data on conditions and outcome, with results from calibration

Country	Re-entering	Short-term	Long-term	Family responsibilities	Discouraged	Total NEETs	Environment responsibility
AT	9	35.2	10.4	17.1	1.7	7.7	6.17
BE	12	30.3	17.7	8.7	1.9	12	6.07
CZ	3.4	37.7	18.2	27.6	0.7	8.1	3.3
DE	12.4	28.9	14	19.7	0.7	6.4	6.6
EE	0	29.7	18.2	28.1	5.5	11.7	4.64
ES	4.3	30	34.6	10.7	5	17.1	6.4
FI	8.8	32.8	4.6	12	4.2	10.2	6.59
FR	15.6	33.2	19.9	8.7	2.7	11.4	7.03
GB	5.3	37.4	19.3	21.2	0.5	11.9	5.77
HU	6.9	29	15.3	17.6	14.1	13.6	4.48
IE	21.4	25.3	26.2	12.1	3.5	15.2	5.96
IT	13.5	15.5	27.1	9.8	14.8	22.1	5.34
LT	1.6	40	11.5	20.3	3.3	9.9	4.77
NL	7.3	30.8	11.5	4.7	3.3	5.5	5.76
PL	2.8	36	18.4	23.7	7.7	12	5.52
PT	6.8	34.8	31	5.1	7.6	12.3	6.23
SE	10.3	37.6	8.1	9.4	2.9	7.2	6.55
SI	11.8	28.7	28.4	12.1	2.1	9.4	6.62
Value for the 0 threshold	0	15.5	4.6	4.7	0.5	5.5	3.3
Value for the 1 threshold	21.4	40	34.6	28.1	14.8	22.1	7.03
Value for the 0.5 threshold	8.05	31.8	18.19	12.09	3.29	11.55	6.015

The first step of the QCA analysis is the calibration of the conditions and the outcome. In the fsQCA, it means to define the level of presence/absence of the conditions and the outcome for each case. Even though the thresholds are extremely qualitative in their definition, we have no theoretical reasons guiding the decision. Therefore, we define the full-presence (fuzzy value 1) and the full-absence

(fuzzy value 0) based on the empirical data, i.e. respectively the maximum and the minimum of the distribution of each condition and the outcome. The threshold for the presence of the outcome (0.5) is based on the median of the distribution: the condition/outcome is present for cases reporting a value higher than the median. When cases have the empirical value identical to the 0.5 threshold, the new threshold has been set below the median. In Table XXX, cases belonging to the condition/outcome are those in the grey cells. Figure 7 visualizes the distribution of countries in which the young population shows a high perception of individual environmental responsibility (outcome presence) and those with a low average perception (outcome absence). Results of the calibration and the truth table are reported in the Appendix (Table A1 and Table A2 respectively).

Figure 7. Presence and absence of high level of perceived individual environmental responsibility among young people across countries (source: our elaboration on ESS 2016 data).



Note: grey bars are for the cases in which there is a high level of the mean perceived individual environmental responsibility (above the median of the distribution); white bars are for the cases in which there is no high level of mean perceived individual environmental responsibility.

Because QCA is not a symmetrical technique (i.e. the results for the absence of the outcome cannot be inferred by the results for the presence of the outcome, and vice versa), the analysis for necessity and sufficiency have been conducted for both the outcome presence and absence. Even though we do not expect necessary conditions, the analysis of necessity is an important prior step in order to avoid the presence of trivial conditions. The analysis does not reveal any necessary – and so trivial – conditions (see Table A3 and Table A4 in Appendix).

The analysis of the sufficiency, instead shows several different sufficient paths toward the presence and the absence of the outcome. As already said, the sufficiency analysis returns three solutions: the

complex, the parsimonious and the intermediate. We decide to focus on the intermediate solution, because of its parsimony respect to the complex but more selective regarding the logical remainders than the most parsimonious (the most parsimonious and the complex solutions are reported in the Appendix). In particular, for the outcome presence, the intermediate solution is derived by imposing the following assumptions: absence of high presence of NEETs, discouraged, long-term and because of family responsibilities NEETs; presence of high proportion of short-term and re-entering NEETs. Table 3 shows the, three alternative paths that emerge from the minimization. In the table are also reported the value of the consistency of each solution and the consistency of the overall solution, plus the raw and unique coverage for each path and the coverage of the overall solution. As explained in the methodological section, the consistency returns the information on the "goodness of fit" of the model. In this case, consistency are always high (close to the maximum, i.e. 1). The raw coverage indicates which share of the outcome is explained by each path, while the unique coverage indicates which share of the outcome is exclusively explained by a certain alternative path. While the unique coverages are quite low, the overall coverage and the raw ones are quite high.

The first solution is specific for Spain and Portugal: here a context with a low presence of re-entering NEETs and because of family responsibilities is sufficient for finding a high level of sense of responsibility for the environment among young people. The second solution represents the case of France and Sweden: here, the low proportion of discouraged and because of family reasons NEETs together with the high presence of short-term NEETs lead to a strong perception of the individual environmental responsibility. Finally, the third solution mirrors the cluster of countries made by Germany, Sweden and Austria, where the absence of discouraged and long-term NEETs combined with the high proportion of re-entering NEETs is sufficient for measuring a high level of environmental responsibilities among the young population. Compared to the complex solution (see Table A5 and A6 in the Appendix) the intermediate solution is more parsimonious; it is interesting to note that in the complex solution a high proportion of NEETs is always present in all the alternative sufficient paths towards the outcome. This seems to go against our expectations, which associate the NEET condition with a lower propensity of feeling responsible for the present environmental condition and so capable to contribute in positive or negative way to the ongoing environmental crisis. However, as we hypothesized, the NEETs composition more than their incidence in the youth population can be associated with the outcome. In particular, non-vulnerable NEETs might be more prone to feel responsible for the environment than vulnerable ones.

Table 3. Analysis of sufficiency for the outcome presence: intermediate solution

	Raw coverage	Unique coverage	Consistency	Countries
SOL. 1 ~family responsibilities*~re-entering	0.5	0.09	0.95	Spain, Portugal
SOL. 2 ~discouraged*~family responsibilities*short - term	0.52	0.03	0.99	France, Sweden
SOL. 3 ~discouraged*~long-term*re-entering	0.52	0.11	0.98	Germany, Sweden, Austria
Overall solution coverage: 0.72 **Overall solution consistency: 0.95**				

Results for the absence of the outcome – i.e. a low level of perceived individual responsibility for the environment – (see Table 4) show that the combination of presence of non-vulnerable NEETs and absence of vulnerable NEETs is predominant across the paths (complex and parsimonious solutions in the Appendix, Table A7 and A8). The first solution refers to the case of Netherlands, where the low presence of NEETs because of family responsibility and short-term NEETs are sufficiently leading to the absence of widespread sense of environmental responsibility. To be noticed that Italy belongs to the same cluster, even though it does not appear in the solution because its outcome level is not sufficiently high to sustain the consistency of the solution. The second solution represents Estonia, Hungary and Lithuania: here the low level of perceived individual responsibility among young people is associated with a high presence of discouraged NEETs and NEETs because of family reasons combined with a low presence of re-entering. The third solution is exclusively for Poland, where the high incidence of long-term and discouraged NEETs combined with low incidence of re-entering is sufficient for the absence of the sense of individual environmental responsibility. Finally, the fourth solution mirrors the case of UK and Poland: the path is similar to the one in solution 3, where the presence of discouraged NEETs is substituted by the presence of NEETs because of family responsibilities. The parameters of consistency and coverage are at a good level, even though the consistency for the path of Netherland is definitely lower (but acceptable) if compared to the other paths.

Table 4. Analysis of sufficiency for the outcome absence: intermediate solution

	Raw coverage	Unique coverage	Consistency	Countries
SOL.1				
~family responsibilities*~short-term	0.48	0.19	0.75	Netherlands
SOL.2				Estonia, Hungary,
discouraged*family responsibilities*~re-entering	0.47	0.11	0.84	Lithuania
SOL.3				
discouraged*long-term*~re-entering	0.41	0.01	0.82	Poland
SOL.4				
family responsibilities*long-term*~re-entering	0.47	0.1	0.9	UK, Poland
solution coverage: 0.83				
solution consistency: 0.79				

4.2. Results from the mediation model

In this section, we aim to investigate if the fact that NEETs are more prone to have a lower subjective well-being is related to their happiness and if this affects their level of perceived individual environmental responsibility. Results from the QCA analysis are included in this step by running different models for each cluster of countries, because they suggest that different configurations of NEETs population might favour the presence of high (or low) levels of perceived environmental responsibility.

Before testing the mediated model, we perform the multiple regression model for the perceived individual responsibility for the environment, without including the happiness variable as predictor. In this way, we can see if there is an effect of being NEET on the dependent variable without controlling for the mediation. Results for Italy and all the selected European countries together are reported in Table 5. Being NEET is negatively associated with the sense of individual responsibility, and particularly in Italy, while having a tertiary education seems to be important for the perception of being capable of doing something for the environment. Interesting, having children – i.e. family responsibility – is associated with a lower perceived environmental responsibility in Europe but not in Italy, where the relationship is not significant.

Table 5. Multiple regression for the perceived individual environmental responsibility among young population (age 22-35) in Italy and Europe (selected countries).

	Italy			Europe		
	Coeff.	S.E.	Sign	Coeff.	S.E.	Sign
neet	-0.862	0.291	**	-0.278	0.103	*
woman	-0.131	0.240		0.394	0.059	***
tertiary education	1.369	0.287	***	0.691	0.059	***
in couple	0.198	0.678		0.079	0.211	
with children	0.131	0.302		-0.239	0.067	***
age	-0.022	0.032		0.009	0.008	
constant	5.857	0.900	***	4.939	0.224	***

Note: ***< 0.001; **<0.01; *<0.05

Thus, is happiness a mediator between being NEET and the individual attitude to be involved in pro-environment behaviours? Results from the mediation model for Italy and Europe are reported in Table 6. In both the contexts, being NEET is negatively and significantly associated with happiness. However, while a full mediation effect is observable in the European context, a partial mediation effect is present in Italy. In fact, while the NEET variable becomes non-significant as predictor of the level of individual environmental responsibility in the model for European countries, in Italy it still keeps a significant negative effect. In both the contexts, as expected, increasing level of happiness is associated with higher level of individual responsibility.

Table 6. Generalized structural equation model for the level of individual sense of responsibility for the environment, mediated by happiness, among young people (age: 22-35) in Italy and Europe (selected countries).

			Italy			Europe		
			Coeff.	S.E.	Sign	Coeff.	S.E.	Sign
happy	<---	neet	-0.592	0.188	***	-0.743	0.065	***
happy	<---	woman	0.13	0.155		0.099	0.037	**
happy	<---	tertiary education	0.326	0.187		0.206	0.037	***
happy	<---	in couple	-1.331	0.444	**	-0.249	0.133	
happy	<---	with children	0.097	0.195		0.467	0.042	***
happy	<---	age	-0.021	0.02		-0.028	0.005	***
environmental responsibility	<---	with children	0.118	0.298		-0.317	0.067	***
environmental responsibility	<---	in couple	0.441	0.675		0.13	0.21	
environmental responsibility	<---	tertiary education	1.304	0.284	***	0.653	0.059	***
environmental responsibility	<---	woman	-0.151	0.237		0.377	0.059	***
environmental responsibility	<---	happy	0.185	0.071	**	0.169	0.017	***
environmental responsibility	<---	neet	-0.75	0.29	**	-0.153	0.103	
environmental responsibility	<---	age	-0.019	0.031		0.014	0.008	**

Note: ***< 0.001; **<0.01; *<0.05

However, the comparison between Italy and the European context is not very informative, because European countries are not homogeneous in terms of NEETs composition. We saw, in fact, that different configurations of NEETs could be sufficient conditions for the same outcome – i.e. high or low sense of individual environmental responsibility among young population. In order to see whether there is a context-effect that affects our relationship of interest and if this context effect differs according to the sufficient NEETs configuration for the outcome, we include the QCA solutions in our model. Because the same country can belong to different configurations, we model the relationship in the different clusters of countries as identified by the solutions and we perform an invariance test between couples of models.

The first group of countries are those for which there is a sufficient solution for the presence of high level of perceived individual responsibility for the environment, namely Austria, France, Germany, Portugal, Spain and Sweden. In addition, Belgium, Finland and Slovenia will potentially belong to this group, but the three countries do not sustain any sufficient configuration in the QCA analysis.

The multiple regressions for environmental responsibility are in the Appendix (see Table A9). Neet is significantly related to the responsibility for the environment only in the cluster of Austria, Germany and Sweden. Therefore, mediation can be hypothesized only for this group of country. In fact, happiness mediates the relationship in this case (see Table 7), being negatively related with being NEET and positively related with responsibility.

Table 7. Generalized structural equation model for the level of individual sense of responsibility for the environment, mediated by happiness, among young people (age: 22-35) in Austria, Germany and Sweden.

			Austria, Germany, Sweden		
			Coeff.	S.E.	Sign
happy	<---	neet	-1.188	.211	***
happy	<---	woman	-.017	.096	
happy	<---	tertiary education	.287	.103	**
happy	<---	in couple	.070	.299	
happy	<---	with children	.678	.112	***
happy	<---	age	-.022	.013	
environmental responsibility	<---	with children	-.299	.163	
environmental responsibility	<---	in couple	-.491	.430	
environmental responsibility	<---	tertiary education	.748	.148	***
environmental responsibility	<---	woman	.425	.137	**
environmental responsibility	<---	happy	.134	.042	***
environmental responsibility	<---	neet	-.526	.312	
environmental responsibility	<---	age	-.003	.019	

Note: ***< 0.001; **<0.01; *<0.05

The second group of countries are those displaying a low level of sense of individual environmental responsibility among young population and for which there is a sufficient path linking the outcome with the configuration of NEETs – i.e. Estonia, Hungary, Lithuania, Netherlands, Poland and UK. Other countries show a low level of responsibility, but they do not sustain the sufficiency of the solutions: Czech Republic, Italy and Ireland. In particular, as we previously said, Italy show the same configuration sustained by the solution for Netherlands, but its outcome level is a little bit lower than expected for sustaining the consistency of the solution. By looking at the results of the multiple

regressions (in the Appendix, Table A10), no one of the cluster shows a significant relationship between being NEET and the level of perceived responsibility for the environment.

4.3. A focus on the Italian case: results from the Youth Report data

We replicate the same regression model by using the Italian Youth Report data applied to two dependent variables: the one measuring the attitude on the institutional vs individual environmental responsibility and the index derived by the Likert scale to which the question belongs.

Results for the analysis on the responsibility variable are in Table 8 – the multiple regression model – and Table 9 – the mediation model. The multiple regression returns a positive significant coefficient linking being NEET with the level of institutional vs individual responsibility for the environment. Including the mediation variable the link between being NEET and happiness is negative – as expected – but there is no significant relationship between happiness and individual responsibility. The sign of the relationship between being NEET and responsibility in the multiple regression suggests that NEETs are more prone to assign the responsibility for the environmental situation to institutions than to the single individual – and themselves among the others. This result actually mirrors the results found with ESS data.

Table 8. Multiple regression model for the institutional vs individual environmental responsibility (source: Italian Youth Report 2018).

	Coeff.	S.E.	Sign
neet	0.402	0.139	**
woman	-0.500	0.123	***
tertiary education	0.006	0.136	
in couple	0.482	0.158	**
with children	0.012	0.160	
age	-0.008	0.015	
constant	4.750	0.434	***

Table 9. Generalized structural equation model for the institutional vs individual environmental responsibility (source: Italian Youth Report 2018).

			Coeff.	S.E.	Sign
happy	<---	neet	-0.703	0.104	***
happy	<---	woman	-0.023	0.082	
happy	<---	tertiary education	0.209	0.08	**
happy	<---	in couple	0.627	0.097	***
happy	<---	with children	0.069	0.101	
happy	<---	age	-0.058	0.011	***
environmental responsibility	<---	age	-0.009	0.017	
environmental responsibility	<---	with children	-0.009	0.157	
environmental responsibility	<---	in couple	0.27	0.153	
environmental responsibility	<---	tertiary education	-0.172	0.125	
environmental responsibility	<---	woman	-0.224	0.128	
environmental responsibility	<---	neet	-0.02	0.163	
environmental responsibility	<---	happy	0.052	0.035	

The remaining set of questions in the Likert scale have been summarized in an index which has been calculated by taking the mean of all the items[7], excluding the one measuring the attitude toward the institutional vs individual responsibility for the environment. Both the multiple regression model (Table 10) and the mediation model (Table 11) have been estimated on the new dependent variable. The index measures the overall attitude toward the individual involvement in pro-environment behaviours; this would mirror the perception of the individual capability of doing something for the environment, which is linked to the perceived individual environmental responsibility. The multiple regression reveals a negative significant relationship between being NEET and the pro-environment attitudes and behaviours, while the GSEM model supports the hypothesis of the existence of a (full) mediated relationship by the level of happiness.

[7] The decision is based on the factorial structure of the items: the factor analysis shows that all the items belong to one factor with a high Cronbach Alfa – i.e. 0.89.

Table 10. Multiple regression model for the pro-environment attitude (source: Italian Youth Report 2018).

	Coeff.	S.E.	Sign
neet	-0.394	0.091	***
woman	0.112	0.081	
tertiary education	0.186	0.090	*
in couple	0.492	0.104	***
with children	-0.056	0.105	
age	-0.027	0.010	**
constant	7.993	0.286	***

Table 11. Generalized structural equation model for the pro-environment attitude (source: Italian Youth Report 2018).

			Coeff.	S.E.	Sign
happy	<---	neet	-0.706	0.103	***
happy	<---	woman	-0.022	0.082	
happy	<---	tertiary education	0.221	0.081	**
happy	<---	in couple	0.642	0.097	***
happy	<---	with children	0.079	0.101	
happy	<---	age	-0.057	0.011	***
environmental responsibility	<---	happy	0.156	0.020	***
environmental responsibility	<---	neet	-0.086	0.094	
environmental responsibility	<---	woman	0.310	0.074	***
environmental responsibility	<---	tertiary education	0.194	0.073	**
environmental responsibility	<---	in couple	0.007	0.088	
environmental responsibility	<---	with children	0.029	0.090	
environmental responsibility	<---	age	-0.012	0.010	

5. Discussion and conclusion

The aim of our study was to investigate a relationship between two important aspects of the sustainable development: social inclusion and environment protection. We explore whether there is an association between the condition of NEET and the level of perceived responsibility of the individual for the environment. In order to answer our research question we adopted an innovative mixed-method approach, by combining a set-theoretic method – i.e. fsQCA – with a mediation model estimated by GSEM, and investigating the relationship at both macro and micro level. The two steps of the analyses allow for an integration between qualitative and quantitative methods. From the qualitative stage, we derive sufficient configurations of NEETs – more or less characterized by vulnerability – which lead to the presence (or absence) of high level of sense of responsibility for the environment among the young population. The groups of countries belonging to each configuration are then included into the statistical analyses to explore whether the living conditions of young people, and especially those that are NEETs, are in some way related to the perceived environmental responsibility at the individual level.

We saw that those contexts favouring the presence of non-vulnerable NEETs are also those with a high level of perceived environmental responsibility of the individual in the young population. On the contrary, countries with widespread condition of vulnerability for NEETs are those reporting a low level of individual responsibility for protecting the environment. However, the same relationship is not always present at the micro level. By analysing the micro-level hypothesis in each context – as derived by the results of the macro-level analysis – we found a significant relationship only in Italy and in the cluster of countries characterized by the absence of discouraged and long-term NEETs combined with a high proportion of re-entering NEETs (i.e. Germany, Austria and Sweden). Germany Austria and Sweden not only have a high proportion of non-vulnerable NEETs but also a very low proportion of total NEETs (the lowest together with Netherlands). Italy, instead, has the highest proportion of NEETs and most of them are in condition of vulnerability. A further interesting result is that, in both the contexts, the relationship between being NEET and the level of responsibility is mediated by the individual happiness. Thus, it seems that, independently by the context, if there is a significant relationship between being NEET and the feeling of being responsible for the environment this is mediated by how much the individual feels happy. Which sustains our interpretation that, if being NEET reduces the level of individual involvement in environmental responsibilities, this depends on the fact that the NEET condition is detrimental for the individual's motivation to contribute to the public good.

While the main contribution of our study is to show, at least in some contexts, the existence of a macro and micro level relationship between young people social exclusion and their scarce sense of responsibility for the environment, it does not provide a justification for why this happens only in some countries. Further studies in this direction should investigate which are the reasons why the relationship is not generalizable in our population. The lack of information on the specific types of NEET in surveys that explore the attitudes and behaviours towards the environment makes difficult to test our macro-level hypothesis at the micro-level. For the Italian case, however, we were able to get a deeper insight by using an ad hoc youth survey. Even though we cannot distinguish among different types of NEET, we can explore more in-depth the complexity of the dependent variable. In particular, we were able to see whether the association found with ESS data persist when we ask about the responsibility of the institution or about the attitudes toward adopting pro-environmental behaviours. The consistency among the results suggests that Italy is actually a case in which being NEET seems to be detrimental for the environment. The reason might be a high level of dissatisfaction with the actual life condition, mirrored by the happiness level, for which the institutions are seen as responsible. This might bring a feeling of disaffection regarding the enlarged community/institutions and of indifference for the environmental problem, seen as more marginal in their priorities scale.

Our study is of relevance to policy makers, because it suggests the necessity to find a common solution to two urgencies our societies are facing, which might compromise the future of our daughters and sons. In some countries[8], policy makers and organizations are already investing on the involvement of young people in the green economy, which is going to be the necessary direction of the future – sustainable – development. For this reason, we think that more studies should go in this direction to explore whether and how sustaining youth social inclusion and young people involvement in the environmental protection can represent a unique strategy to guarantee a - happy - life to the future generations.

[8] See the Report of the Sustainable Development Commission: "Improving young people's lives: the role of the environment in building resilience, responsibility and employment chances" (2010).

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Appendix

Table A1. Results from calibration

Country	Environmental responsibility	Re-entering	Short-term	Long-term	Family responsibility	Discouraged	Total NEET
AT	0.58	0.55	0.78	0.15	0.72	0.16	0.71
BE	0.51	0.71	0.43	0.48	0.2	0.19	0.82
CZ	0.05	0.15	0.9	0.5	0.95	0.06	0.72
DE	0.84	0.73	0.37	0.29	0.81	0.06	0.67
EE	0.18	0.05	0.4	0.5	0.95	0.64	0.81
ES	0.74	0.2	0.42	0.94	0.37	0.61	0.91
FI	0.84	0.54	0.59	0.05	0.5	0.56	0.78
FR	0.95	0.85	0.63	0.57	0.2	0.36	0.81
GB	0.42	0.26	0.89	0.55	0.85	0.05	0.82
HU	0.15	0.39	0.37	0.35	0.74	0.94	0.85
IE	0.47	0.95	0.23	0.79	0.5	0.52	0.88
IT	0.31	0.77	0.05	0.81	0.29	0.95	0.95
LT	0.2	0.08	0.95	0.19	0.82	0.51	0.77
NL	0.42	0.43	0.45	0.19	0.05	0.51	0.64
PL	0.36	0.12	0.82	0.51	0.9	0.76	0.82
PT	0.62	0.39	0.75	0.89	0.06	0.76	0.83
SE	0.82	0.62	0.89	0.1	0.26	0.42	0.7
SI	0.85	0.7	0.36	0.84	0.5	0.23	0.76

Table A2. Truth table

re-entering	short-term	long-term	family resposibilities	discouraged	total neet	number	environment responsibility	raw consistency
1	1	1	0	0	1	1	1	1
1	1	0	1	0	1	1	1	0.96997
1	1	0	0	0	1	1	1	0.997409
1	0	1	0	1	1	1	0	0.847887
1	0	0	1	0	1	1	1	0.982456
1	0	0	0	0	1	1	1	0.993865
0	1	1	1	1	1	1	0	0.811075
0	1	1	1	0	1	1	0	0.794595
0	1	1	0	1	1	1	1	0.962585
0	1	0	1	1	1	1	0	0.752089
0	0	1	0	1	1	1	1	0.960573
0	0	0	1	1	1	1	0	0.745161
0	0	0	0	1	1	1	1	0.926471
1	1	1	1	1	1	0		
1	1	1	1	1	0	0		
1	1	1	1	0	1	0		
1	1	1	1	0	0	0		
1	1	1	0	1	1	0		
1	1	1	0	1	0	0		
1	1	1	0	0	0	0		

1	1	0	1	1	1	0
1	1	0	1	1	0	0
1	1	0	1	0	0	0
1	1	0	0	1	1	0
1	1	0	0	1	0	0
1	1	0	0	0	0	0
1	0	1	1	1	1	0
1	0	1	1	1	0	0
1	0	1	1	0	1	0
1	0	1	1	0	0	0
1	0	1	0	1	0	0
1	0	1	0	0	1	0
1	0	1	0	0	0	0
1	0	0	1	1	1	0
1	0	0	1	1	0	0
1	0	0	1	0	0	0
1	0	0	0	1	1	0
1	0	0	0	1	0	0
1	0	0	0	0	0	0
0	1	1	1	1	0	0
0	1	1	1	0	0	0
0	1	1	0	1	0	0
0	1	1	0	0	1	0
0	1	1	0	0	0	0
0	1	0	1	1	0	0
0	1	0	1	0	1	0
0	1	0	1	0	0	0
0	1	0	0	1	1	0
0	1	0	0	1	0	0
0	1	0	0	0	1	0
0	1	0	0	0	0	0
0	0	1	1	1	1	0
0	0	1	1	1	0	0
0	0	1	1	0	1	0
0	0	1	1	0	0	0
0	0	1	0	1	0	0
0	0	1	0	0	1	0
0	0	1	0	0	0	0
0	0	0	1	1	0	0
0	0	0	1	0	1	0
0	0	0	1	0	0	0
0	0	0	0	1	0	0
0	0	0	0	0	1	0
0	0	0	0	0	0	0

Table A3. Analysis of necessity for the outcome presence

	Consistency	Coverage
re-entering	0.75	0.82
~re-entering	0.61	0.6
short-term	0.74	0.67
short-term	0.61	0.73
long-term	0.66	0.71
~long-term	0.69	0.69
family responsibilities	0.61	0.58
~family responsibilities	0.71	0.8
discouraged	0.58	0.65
~discouraged	0.76	0.73
total NEETs	0.94	0.61
~total NEETs	0.37	0.93

Table A4. Analysis of necessity for the outcome absence

	Consistency	Coverage
re-entering	0.56	0.58
~re-entering	0.82	0.76
short-term	0.76	0.64
~short-term	0.61	0.68
long-term	0.67	0.67
~long-term	0.71	0.66
family responsibilities	0.81	0.72
~family responsibilties	0.54	0.56
discouraged	0.7	0.73
~discouraged	0.67	0.6
total NEETs	0.97	0.59
~total NEETs	0.83	0.76

Table A5. Analysis of sufficiency for the outcome presence: complex solution

	Raw coverage	Unique coverage	Consistency	Countries
re-entering*~long-term*~discouraged*total NEETs	0.52	0.1	0.98	Germany, Sweden, Austria
~re-entering*~short-term*~family responsibilities*discouraged*total NEETs	0.35	0	0.94	Spain
re-entering*short-term*~family responsibilities*~discouraged*total NEETs	0.49	0.04	0.99	France, Sweden
~re-entering*long-term*~family responsibilities*discouraged*total NEETs	0.34	0.05	0.97	Spain, Portugal
Solution coverage: 0.71				
Solution consistency: 0.95				

Table A6. Analysis of sufficiency for the outcome presence: parsimonious solution

	Raw coverage	Unique coverage	Consistency	Countries
~re-entering*~family responsibilities	0.5	0.13	0.95	Spain, Portugal Germany, Slovenia, France, Sweden, Austria
re-entering*~discouraged	0.66	0.29	0.95	
Solution coverage: 0.79				
Solution consistency: 0.93				

Table A7. Analysis of sufficiency for the outcome absence: complex solution

	Raw coverage	Unique coverage	Consistency	Countries
SOL.1 ~re-entering*~short-term*long-term*discouraged*total NEETs	0.37	0.01	0.9	Hungary, Netherlands
SOL.2 ~re-entering*~long-term*family responsibilities*discouraged*total NEETs	0.41	0.04	0.88	Hungary, Lithuania
SOL.3 ~re-entering*short-term*long-term*family responsibilties*total NEETs	0.44	0.1	0.89	UK, Poland
SOL.4 ~re-entering*short-term*long-term*discouraged*total NEETs	0.37	0	0.85	Poland
solution coverage: 0.8				
solution consistency: 0.81				

Table A8. Analysis of sufficiency for the outcome abesence: parsimonious solution

	Raw coverage	Unique coverage	Consistency	Countries
SOL.1 ~re-entering	0.83	0.47	0.76	Estonia, Czech Republic, Hungary, Netherlands
SOL.2 ~short-term*~family responsibilties	0.48	0.13	0.75	Netherlands
solution coverage: 0.96				
solution consistency: 0.75				

Table A9. Multiple regression for the perceived individual environmental responsibility among young population (age 22-35) in selected countries.

	Portugal, Spain			France, Sweden			Austria, Germany, Sweden		
	Coeff.	S.E.	Sign	Coeff.	S.E.	Sign	Coeff.	S.E.	Sign
neet	-0.195	0.330		0.386	0.337		-0.683	0.311	*
woman	0.117	0.228		0.631	0.192	***	0.422	0.138	**
tertiary education	0.781	0.237	***	0.821	0.194	***	0.780	0.149	***
in couple	-0.241	0.669		0.296	0.641		-0.490	0.433	
with children	-0.154	0.284		-0.371	0.222		-0.206	0.162	
age	-0.021	0.028		0.021	0.027		-0.006	0.019	
constant	6.613	0.808	***	5.697	0.742	***	6.146	0.520	***

Table A10. Multiple regression for the perceived individual environmental responsibility among young population (age 22-35) in selected countries.

	Netherlands			Estonia, Hungary, Lithuania			Poland			Poland, UK		
	Coeff.	S.E.	Sign	Coeff.	S.E.	Sign	Coeff.	S.E.	Sign	Coeff.	S.E.	Sign
neet	-0.087	0.578		-0.492	0.401		-0.606	0.434		-0.546	0.339	
woman	0.494	0.292		0.421	0.166	*	0.595	0.278	*	0.498	0.195	*
tertiary education	0.435	0.294		1.042	0.171	***	0.176	0.267		0.668	0.189	***
in couple	-0.119	1.059		0.223	0.655					-1.080	0.537	*
with children	-0.821	0.321	*	-0.340	0.180		0.301	0.296		-0.219	0.206	
age	0.098	0.039	*	-0.012	0.023		0.051	0.036		0.079	0.024	***
constant	2.768	1.124	*	4.605	0.656	***	3.598	1.003	***	2.893	0.703	***