



School-to-work transition: putting non-cognitive skills in context. The case of NEET and suggestions for policy

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Abstract

NEETs represent a category at risk for social exclusion and may show poor non-cognitive skills. In this review we target this issue, taking the contemporary theory of skills formation as a theoretical framework. Intrapersonal agency and motivational components, including educational aspirations, goal attainability, and investing in active efforts are protective factors for a successful school-to-work transition. Having an internal locus of control may help teenagers but might not compensate for a low socioeconomic status. Experiencing high-quality apprenticeships and internships could help teenagers find their vocational specificity. Large-scale intervention programs, promoting investment in human agency and motivation constitute a proper policy strategy.

Keywords NEET · Non-cognitive skills · Policy

Résumé

Les NEET représentent une catégorie à risque d'exclusion sociale et peuvent présenter de faibles compétences non cognitives. Dans cette revue, nous nous penchons sur cette question, en prenant la théorie contemporaine de la formation des compétences comme cadre théorique. L'agence intrapersonnelle et les composantes motivationnelles, y compris les aspirations éducatives, la possibilité d'atteindre des objectifs et l'investissement dans des efforts actifs, sont des facteurs de protection pour un apprentissage réussi. Le fait d'avoir un locus de contrôle interne peut aider les adolescents, mais ne peut pas compenser un faible statut socio-économique. L'expérience d'apprentissages et de stages de haute qualité pourrait aider les adolescents à trouver leur spécificité professionnelle. Les programmes d'intervention à grande échelle, la

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promotion de l'investissement dans l'agence humaine et la motivation constituent une stratégie politique appropriée.

Zusammenfassung

NEETs stellen eine von sozialer Ausgrenzung bedrohte Gruppe dar und weisen möglicherweise schlechte nicht-kognitive Fähigkeiten auf. In dieser Übersicht widmen wir uns diesem Thema, wobei wir die zeitgenössische Theorie der Kompetenzbildung als theoretischen Rahmen verwenden. Intrapersonale Handlungsfähigkeit und motivationale Komponenten, einschließlich Bildungsaspirationen, Zielerreichbarkeit und Investitionen in aktive Bemühungen, sind Schutzfaktoren für einen erfolgreichen Übergang von der Schule ins Berufsleben. Ein interner Kontrollmechanismus kann Teenagern helfen, aber einen niedrigen sozioökonomischen Status nicht ausgleichen. Qualitativ hochwertige Lehrstellen und Praktika könnten Jugendlichen helfen, ihre berufliche Orientierung zu finden. Groß angelegte Interventionsprogramme, die Investitionen in menschliches Handeln und Motivation fördern, sind eine geeignete politische Strategie.

Resumen

Los NEETs representan una categoría en riesgo de exclusión social y pueden mostrar escasas habilidades no cognitivas. En esta revisión nos centramos en esta cuestión, tomando como marco teórico la teoría contemporánea de la formación de habilidades. La agencia intrapersonal y los componentes motivacionales, incluidas las aspiraciones educativas, la posibilidad de alcanzar objetivos y la inversión en esfuerzos activos son factores de protección para una transición exitosa de la escuela al trabajo. Tener un locus de control interno puede ayudar a los adolescentes, pero no compensar un estatus socioeconómico bajo. La experiencia de un aprendizaje y unas prácticas de alta calidad podría ayudar a los adolescentes a encontrar su especificidad profesional. Los programas de intervención a gran escala, el fomento de la inversión en la agencia humana y la motivación constituyen una estrategia política adecuada.

Introduction

In the economic literature young people “not in education, employment or training” are referred to as NEETs (Eurofound, 2012). The definition of NEET is culturally oriented. For instance, in Japan housewives and young people who are actively searching for a job would not be classified as NEETs (Liu et al., 2019). The origin of the NEET concept goes back to the 1980s when it was introduced in the context of British legislation. Since 2010 the European Union (EU) has routinely used the NEET rate as an indicator of youth condition. NEET is a multifactorial construct (Ripamonti & Barberis, 2021), reflecting a more extensive form of social exclusion than that implied by early leaving from education and training (ELET, Ripamonti, 2018; Ripamonti & Barberis, 2018). For only very few teenagers or young people transitioning through the NEET state is this the consequence of personal choices (e.g., teenagers temporarily taking care of a newborn). The NEET phenomenon has

been widely studied in the literature, especially as concerns its link with the economic and social environment where teenagers live. However, due to the limited availability of longitudinal studies, individual psychological factors that could be reliably related to the NEET status have not been identified.

The present narrative review mainly focuses on non-cognitive skills that have been investigated in relation to the NEET population. Studies have been retrieved from the PsychInfo database and Google Scholar, ranging from 2000 to 2021, and combining the keyword “NEET” with the keywords “non-cognitive skills”, “self-esteem”, “motivation”, “agency”, “mastery”, “self-efficacy”, “resilience”, “locus of control”, and “personality”. The abstract of retrieved items has been inspected, and for pertinent studies, the full text has been downloaded and examined. The reviewed literature on NEET has been supplemented with selected studies and book chapters that addressed non-cognitive skills facilitating the school-to-work transition in more general youth populations (E-Table 1).

This study takes as a general framework contemporary human capital theory (HCT). Smith (1776) suggested that the wealth of a country is related to the educational level and to the contribution of human knowledge and innovation. Starting from the 1960s, a formal HCT has been put forward by the economists of the Chicago school. Becker (1962) showed how investment in education and training can have a beneficial effect in terms of productivity. Mincer (1974) measured HC in terms of schooling or completed years of education, hence focusing on cognitive skills. In the 1970s and 1980s, the economic literature started to discuss the role of cognitive skills (Brown & Reynolds, 1975; Kendrick, 1976) and non-cognitive skills (Bowles & Gintis, 1976) with respect to employability, maintaining a stable occupation, and earnings.

In the 2000s the classical HCT has been updated (Campbell et al., 2014; Heckman & Rubinstein, 2001), stemming from interdisciplinary studies in economics, developmental psychology, and neuroscience (Almlund et al., 2011; Borghans et al., 2008), showing the importance of non-cognitive skills (Heckman & Kautz, 2012) in school achievement and in the labor market.

A challenge for the European Union: NEETs

Both Eurostat and most EU national statistical institutions include in the NEET category young people in the age ranges of 15–24, 15–29, or 15–34 years. Considering the last available data¹ and the age range of 15–29 years, the total NEET rate in Italy in 2021 was 23.1% (21.2% for males; 25.0% for females), about 10 points higher than the EU average (13.2%); 20.3% in Romania (14.6% for males; 26.3% for females); and 17.3% in Greece (16.6% for males; 18.1% for females). For the same age range the total NEET rate was 9.2% in Germany, 15.2% in Spain, and 12.8% in France (see Table 1 and E-Figures 1–3).

¹ <https://ec.europa.eu/eurostat/>.

Table 1 Indicators of NEET, ELET, youth unemployment, and GDP per capita; Inequality of Income Distribution in the EU27 (IID, Eurostat data), Gender Equality Index (GEI, EIGE)

Country	NEET%			ELET%			Youth unemployment %			GDP	IID	GEI
	T	M	F	T	M	F	T	M	F			
Austria	9.4	8.5	10.3	8	9.6	6.3	11	10.7	11.3	120	4.08	68.0
Belgium	10.1	8.2	9.7	6.7	8.9	4.5	18.2	19.9	16.2	121	3.42	72.7
Bulgaria	17.6	12.7	20.9	12.2	11.5	12.9	15.8	16.1	15.3	55	7.45	59.9
Croatia	14.9	12.1	16.2	2.4	3	1.8	21.9	18.9	26.4	70	4.78	59.2
Cyprus	15.4	12.9	16.3	10.2	12.7	7.9	17.1	17.8	16.3	88	4.23	57.0
Czechia	10.9	4.8	17.3	6.4	7	5.8	8.2	7.6	9.1	91	3.43	56.7
Denmark	8.3	7	8.8	9.8	11.6	8.1	10.8	10.7	11	134	3.93	77.8
Estonia	11.2	12.1	11.7	9.8	12	7.6	16.7	18.4	15	87	5.03	61.6
Finland	9.2	8.4	8.7	8.2	9.3	7.1	17.1	17.8	16.4	113	3.58	75.3
France	12.8	11.4	13	7.8	9.6	6.1	18.9	19	18.8	105	4.42	75.5
Germany	9.2	7.4	10.6	11.8	13.5	9.9	6.9	7.3	6.4	119	4.88	68.6
Greece	17.2	11.3	17.9	3.2	3.4	2.9	35.5	31.1	40.9	65	5.79	52.5
Hungary	11.7	8.2	14.8	12	12.3	11.6	13.5	12	15.5	76	4.15	53.4
Ireland	9.8	8.6	9.6	5	5.4	4.7	14.5	14.5	14.6	220	3.83	73.1
Italy	23.1	19.5	25	12.7	14.8	10.5	29.7	27.7	32.8	95	5.86	63.8
Latvia	12.1	8.2	12.6	7.3	8.9	5.6	14.8	14.9	14.6	71	6.63	62.1
Lithuania	12.7	11.7	13.5	5.3	6.3	4.2	14.3	14	14.7	88	6.14	58.4
Luxembourg	7.7	8.8	6.6	9.3	10.4	8.1	16.9	17.7	16.1	277	4.59	72.4
Malta	9.9	11.1	11.4	11	12.3	9.5	9.6	12.7	6	99	5.03	65.0
The Netherlands	5.5	5.2	6	5.3	6.8	3.9	9.3	9.7	9	132	3.88	75.9
Poland	13.4	10.5	16.9	5.9	7.2	4.4	11.9	11.5	12.5	77	4.02	56.6
Portugal	9.5	7.8	9.7	5.9	7.7	4.1	23.4	21	26.4	74	5.66	62.2
Romania	20.3	14.7	26.3	15.3	15.1	15.5	21	20.9	21.2	73	7.13	54.5
Slovakia	14.2	10.6	17.5	7.8	8.1	7.5	20.6	19.8	22	68	3.03	56.0
Slovenia	7.3	6.8	8.2	3.1	4.2	1.9	12.8	11.5	14.4	90	3.24	67.6
Spain	14.1	11.8	13.8	13.3	16.7	9.7	34.8	34.1	35.6	84	6.19	73.7
Sweden	6	5.4	6.3	8.4	10.2	6.5	24.7	25.3	24.1	124	4.04	83.9

All indicators refer to the year 2021

T total, *M* male, *F* female

NEET %: Percentage of young people (aged 15–29 years) not in education or training

ELET %: Percentage of early leavers (aged 18–24 years) from education and training

Youth unemployment %: Percentage of unemployed persons (aged 15–24 years) on the population in the labor force

GDP: Gross domestic product per capita expressed in purchasing power standards (PPS), namely in relation to the European Union average set to equal 100. If the index of a country is higher than 100, this country's level of GDP per head is higher than the EU average and vice versa

In Ireland the ELET indicators are referred to 2020; in Luxembourg the NEET indicators are referred to 2020

IID: Inequality of Income Distribution measured as the ratio of total income received by the 20% of the population with the highest income (top quintile) to that received by the 20% of the population with the lowest income (lowest quintile). Income must be understood as equalized disposable income. Slovakia

Table 1 (continued)

 data referred to are from 2020

GIE: Gender Inequality Index 2021 (data from 2019). It gives the EU and the Member States a score from 1 to 100. A score of 100 would mean that a country has reached full equality between men and women

Gender differences should also be highlighted. Let us take into consideration the case of Italy, which is a country characterized by a familial welfare state (Esping-Andersen, 2015). In Italy, the ELET rate in 2021 was higher for males (14.8%) than for females (10.5%). However, the situation is reversed as concerns the NEET rate, which was 19.5% for males versus 25% for females. This indicates that while in general women perform better than men in the school context, they find more difficulties in accessing the labor market. This is typical of Italian society, in which women are more involved than men in familial welfare and care activities.

Data on NEET and youth unemployment in Southern European countries were alarming even before 2008; the situation has subsequently worsened because of the effects of the Great Recession (Eichhorst & Neder, 2014). This may reflect a structural problem related to education and the transition from school to work (Chobaker & Purtell, 2021; Leventhal et al., 2001; Vuolo et al., 2014), mainly due to the weaknesses of the education system of these countries.

In sum, in contemporary European societies, the new generations experience a condition of decline in their economic status, testified by the high NEET rate of Southern EU countries such as Italy, Spain, and Greece. Ameliorating the member countries' performance in terms of educational levels and access to the labor market is an important objective of the EU. This was officially ratified by the Lisbon strategy in 2000 and updated in the Europe 2030 strategy (European Commission, 2019). However, as concerns the NEET phenomenon, at least in Southern EU countries, the attainment of these goals is far from being achieved. This will be particularly challenging in the next years, considering the effects of the economic crisis following the new coronavirus disease 2019 (COVID-19) pandemic, as well as the Russian aggression to Ukraine, which have particularly affected the economy of the EU.²

Cognitive skills and NEET

Cognitive skills refer to multidimensional functional domains including basic acquired competencies such as literacy and numeracy, as well as higher-level constructs (e.g., intelligence). In general, higher levels of education lead to faster school-to-work transition (Ryan, 2001). However, cognitive skills should not be merely conceptualized in terms of completed years of education but should be recorded in real time in terms of objective competencies available to the individual.

A study conducted in Ireland using data from the unemployment register of 2006 has documented that a prolonged history of unemployment and a deficiency

² https://ec.europa.eu/commission/presscorner/detail/en/speech_20_1290 (accessed 07.07.20).

in foundational skills such as numeracy and literacy are linked to NEET state (Kelly et al., 2012). This connection has been validated by a Norwegian investigation, which established a correlation between numeracy and literacy skills evaluated through the Survey of Adult Skills (PIAAC), and subsequent records of employment and education, including NEET status (Barth et al., 2019).

It is worth noting that entering the NEET category does not align with the concept of ELET, and these two distinct indicators display varying geographical distributions across EU countries (Rambla & Scandurra, 2021). Nevertheless, the failure to complete formal education significantly contributes to NEET status, particularly among women (Salvà-Mut et al., 2016), who face a higher vulnerability of transitioning into NEET status in Southern European nations.

Let us take again the case of Italy as an example. Despite cognitive skills and attained educational level, in many cases Italian women are segregated to prevalently work in certain sectors, such as care or education, while they are underrepresented in other sectors such as science, politics, and management. Since the COVID-19 crisis of 2020, the situation has gradually worsened, with a further decrease in female employment (MEF, 2021). This is also because, more frequently than men, women have informal types of employment or fixed-term employments that were not likely to be renewed during the pandemic.

Non-cognitive skills and NEET

Non-cognitive skills: a concept in expansion

While distinct in principle, there is a mutual, reciprocal, and continuous influence (including the neurobiological correlates) between cognitive and non-cognitive skills (Heckman & Rubinstein, 2001). The authors of the Chicago school have long recognized that non-cognitive skills are fundamental to predicting school and work success (Heckman & Kautz, 2012). This concept largely comes from a critique of testing cognitive skills and achievements (e.g., the General Educational Development test, GED) carried out in US schools. The transition to the Industry 4.0 paradigm increased the demand for high-skilled workers, with both technical (Autor et al., 2003) and non-technical (Moretti, 2012) competence, such as the ability to innovate and communicate. Technical and communication skills and teamwork predisposition have been described as the most critical abilities in the job market for those aged 16–24 years, relatively independent of cognitive skills (Westwood, 2004). This may explain why non-cognitive skills are so crucial for the contemporary debate in the economic and social sciences.

There is a large variation in the literature regarding the definition of non-cognitive skills (Chiappero-Martinetti & Sabadash, 2014). The reviewed studies can be discussed in the model framework presented in Figure 1. This operationalizes non-cognitive skills (Heckman & Rubinstein, 2001) along five major components that are expected to impact the school-to-work transition, namely, (i) self-esteem; (ii) motivation; (iii) agency and the capacity of dealing with stress and stressors; (iv) the attribution of causes and future expectations; and (v) personality. These components

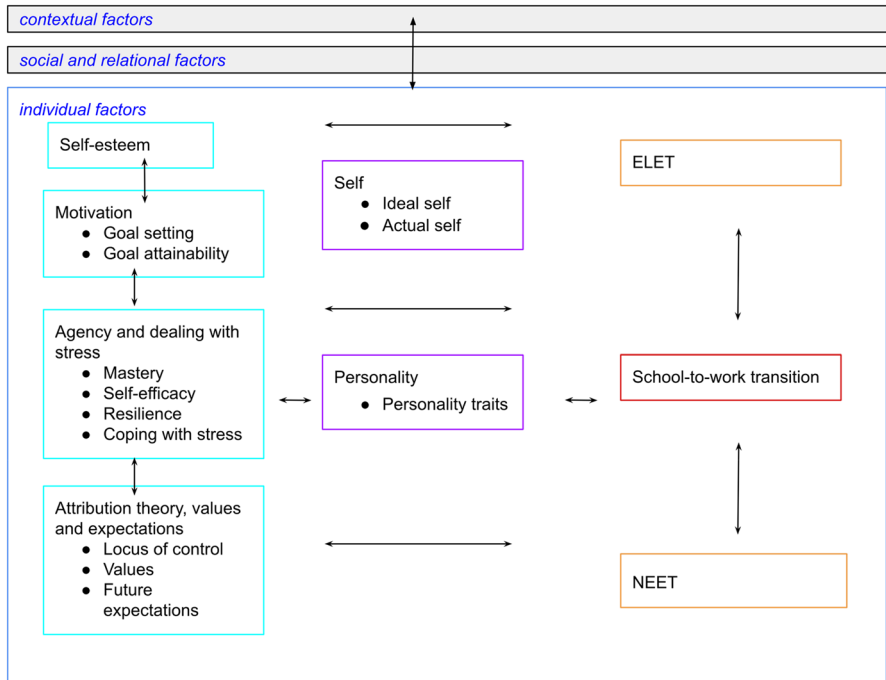


Figure 1 Theoretical model to define non-cognitive skills, and their relationship with the school-to-work transition, ELET, and NEET

may have a direct, indirect, or modifying effect on the school-to-work transition, including the probability of transitioning through the ELET or NEET states.

Self-esteem

Self-esteem is related to the more general self-concept and can be defined as the extent to which the individuals value themselves. Self-esteem develops during adolescence and young adulthood (Erol & Orth, 2011), and is associated with schooling decisions, occupational choices, and wages (Heckman et al., 2006). While extensively studied concerning social outcomes (Donnellan et al., 2005), the possibility that self-esteem can predict NEET state is still underestimated. To our knowledge, this issue has been addressed in only one study, which documented that low self-esteem may be associated with NEET state (Mendolia & Walker, 2015). However, data from the Longitudinal Study of Generations showed that self-esteem affects the trajectory of job satisfaction, but is not related per se to occupational status (Orth et al., 2012). While it is worth evaluating self-esteem in absolute terms, theoretical work has highlighted the importance of the correlated dimension of self-esteem striving (Crocker & Park, 2004). This component of self-esteem has not been yet assessed in relation to the school-to-work transition or occupation, and might explain the negative result reported by Orth et al.

Motivation

Motivation refers to a set of needs, goals, and strategies that regulate human behavior. It involves—at different organization and activation levels—biological, psychological, and social components. In very general terms, motivation is a permanent and stable state of the individual, determined by expectations related to the achievement of specific outcomes, which may lead to taking action to attain these goals. Such actions can involve the activation of intellectual skills and the orchestration of cognitive and non-cognitive processes aimed at achieving the individual's objectives. It is particularly worth recalling the seminal construct of intrinsic motivation, namely, “the inherent tendency to seek out novelty and challenges, to extend and exercise one's capacity, to explore, to learn” (Ryan & Deci, 2000). This concept has some overlap with that of motivational flow (Csikszentmihalyi, 2015) highlighting those conditions leading to mastery of situations because of inherent goals.

The literature has mostly focused on school and learning motivation, while fewer efforts have been dedicated to exploring the motivational construct in marginalized young adults (Katznelson, 2017). Nevertheless, motivation is a key concept to understanding teenagers' trajectories from school to work. This is well illustrated by a large study conducted in Finland, where indicators of motivation were found to favor the transition from school to work (Symonds et al., 2019). Cultural factors related to motivation should also be highlighted. In a study conducted in Japan it has been demonstrated how NEETs would show a different motivational pattern than that of the mainstream Japanese culture, with a lower willingness to conform to in-group members (Liu et al., 2019). Similar results in terms of motivational pattern have been found in the Hikikomori youth (Toivonen et al., 2011). Motivation and self-regulation are to be conceived within the specific challenges for goal-setting set up in the educational and career system of each country (Heckhausen & Buchmann, 2019).

Goal attainability is a factor closely related to goal-setting, which is very important in the school-to-work transition. This is the ability to self-monitor one own's objectives and the capability to attain them. Nurmi et al. (2002) showed that the more the importance of work-related goals and progresses attributable to them was highlighted, the more participants were likely to be employed after graduation.

Agency and dealing with stress

Individual agency is a multidimensional construct that should be conceptualized within the relational sociocultural context where young people live (Schoon & Heckhausen, 2019). Agency involves interrelated factors such as intentionality, forethought, self-reactiveness, self-reflectiveness, investing in active efforts, goal pursuit, surmounting obstacles, and metacognitive capability (Bandura, 2001). A study conducted on a large sample of German and Polish young people aged 16–25 years demonstrated that proactive behavior helps teenagers in dealing with perceived growing occupational uncertainties (Lechner et al., 2016). Research in the context of the Dutch vocational education and training system indicates that a strong belief in

the individual agency is a protective factor in terms of unemployment (De Graaf & Zenderen, 2013). Job search intensity, a proxy of human agency, has implications in terms of the possibility of changing NEET status (Vanoverberghe et al., 2008).

Mastery and self-efficacy

Teenagers and young adults are required to cope with crucial developmental tasks, including the transition from school to work. A sense of self-efficacy and efficacy beliefs are components of individual agency allowing one to properly master and manage the demands of this transition age. Self-efficacy is also part of the more general domain of human agency. Qualitative research conducted in Denmark has shown that young adults that fail in developmental tasks have low self-efficacy, difficulties in mastering negative experiences, and fear of failure (Katznelson, 2017). A study conducted with a sample of NEETs living in a rural Portuguese region documented a positive relationship between self-efficacy and having a previous job contract, and a negative relationship between self-efficacy and unemployment periods longer than 24 months (Simões et al., 2017).

Resilience and coping with stress

The ability to cope with stress and stressors (Biggs et al., 2017) helps to deal with complex situations such as long periods of inactivity or unemployment. The literature has shown how young people who continue down the educational path or start a job with career advancement opportunities show positive intrapersonal agency and coping styles (Ngai et al., 2014). A large study involving Finnish teenagers showed that their perceived level of career-specific parental involvement and warmth were related to goal-related stress 3 years later, with the mediation component of career goal motivation (Dietrich & Salmela-Aro, 2013). Ng-Knight and Schoon (2017) highlighted how the influence of individual agency on shaping the transition from school to work is limited to those situations of not-at-risk socioeconomic status.

Attribution theory and expectations

The locus of control

The construct of locus of control (Galvin et al., 2018) is associated with educational attainment (Barón & Cobb-Clark, 2010) and unemployment (Becker et al., 2012). We may hypothesize that having an internal locus of control (Lefcourt, 2014), i.e., the propensity to attribute internally the effect of behaviors/conducts, could play a protective role in relation to NEET. Settling into a career path is a marker of emerging adulthood (Arnett, 2000), and young people may experience difficulty in taking active control over this path (Sharon, 2016). A study conducted on a sample of Swiss adolescents that measured their locus of control showed how career preparation predicted subsequent success and adolescents' satisfaction (Hirschi, 2010). Mendolia and Walker (2015) found that young people characterized by low efforts and diligence, low self-esteem,

and an external locus of control are more likely to be in the NEET state. However, the positive effect of having an internal locus of control may be hampered by external conditions, as indicated by the case of Spanish NEETs aged 18–24 years of low socioeconomic status (Vancea & Utzet, 2018). Poor socioeconomic status is a reliable predictor of transitioning through the NEET state even in those individuals with good psychological resources and internal locus of control (Ng-Knight & Schoon, 2017). Hence, at least with the current state of knowledge, we may assume that an internal locus of control may not compensate for the effect of low socioeconomic status.

Future expectations

These have a major role in shaping emerging adulthood, including participation in the labor market. In a large longitudinal study conducted in Oslo, educational aspirations were associated with the choices related to upper secondary education and with scholastic efforts (Hegna, 2014). The relation to NEET state has not been investigated; nevertheless, the literature recognizes that future expectations are influenced by factors correlated to NEET state, such as the psychological profile of the individual (e.g., self-esteem, self-efficacy, locus of control), mental health (e.g., absence or low levels of anxiety/depressive symptoms, physical and psychological pain, fatigue), and contextual factors (family and peer influences) (Iovu et al., 2018).

Personality

Personality traits

Different from non-cognitive skills reviewed above, which are potentially malleable through targeted intervention, personality traits are considered virtually stable. According to the big-five factors model (McCrae & Costa Jr, 1997), human personality can be described in terms of five fundamental and relatively stable traits, namely, openness to experience, conscientiousness, extroversion, agreeableness, and emotional stability (Sorić et al., 2017). Although relatively atheoretical, the big-five model may constitute a reasonable basis to explore possible individual differences across NEET subgroups. Nevertheless, to our knowledge, there is still no systematic, extensive, and large-sample investigation of the role of these traits (or their combinations and multidimensional maps) regarding NEET. It may be challenging to assess which of the big five most affects NEET as an outcome, and this question is open for future research. In the field of personality disorders, a randomized control trial found an association between borderline personality disorder and NEET state, both at baseline and after 18 months (Juurink et al., 2022).

Non-cognitive skills in context

Developing non-cognitive skills: apprenticeships and internships

Contemporary human capital theory (HCT) leads to the theoretical prediction that high-quality apprenticeships and internships during high school and the early career stage might protect teenagers from becoming NEETs. In these contexts, adolescents and young people should have the possibility of improving both their cognitive and non-cognitive skills.

Previous professional experience in temporary or precarious occupations does not improve per se the possibility of accessing long-term or full-time employment (Kalleberg, 2018). By contrast, the chances of finding employment may increase by experiencing a satisfying internship during the study program (Aguilar et al., 2018). Even in tertiary education, extracurricular activities, e.g., internships and the dissertation project, allow for students to improve non-cognitive skills such as self-efficacy (Vanoverberghe et al., 2008). A gap-year experience, i.e., a time between the end of school and the start of university, may help students to improve their non-cognitive skills, such as exploration and openness to new experiences, thus ameliorating their employability (Stehlik, 2010). However, this experience is only available for some sectors and is hardly comparable with other experiences such as care work.

A study conducted in Austria showed that, independently of the specific field of knowledge and the qualification attained, vocational specificity is an important factor in reducing mismatch and facilitating initial job placement (Vogtenhuber, 2014). Thus, investing in teenagers' involvement in internship programs allows them to have experience in the field if their vocational goals match the opportunities offered by the local labor market. In this regard, a study conducted with Finnish young adults (aged 23 years) demonstrated the importance of the person–organization fit and intrinsic career values as significant factors in favoring a successful transition from school to work (Sortheix et al., 2013).

The possibility of internships and apprenticeships is not the same in all EU countries. It has been shown that the availability of postsecondary opportunities in a certain geographical region affects young people's decision to enter and persist in their apprenticeship (Lehmann et al., 2015). Completing apprenticeship training is an important component of the school-to-work transition (Lerman, 2013). Investment in non-cognitive skill development during this period may favor the transition to the labor market (Halpern, 2009). However, the positive effect of apprenticeship is diminished if young people perceive this period with a narrow focus or do not invest enough in ameliorating their skills as an opportunity to change the direction of their working path (Taylor et al., 2015).

Self-employment: a solution for NEETs?

Even though the possibility of self-employment has been discussed as a possible strategy against NEET (Tamesberger et al., 2014), entrepreneurship needs a peculiar combination of cognitive and non-cognitive skills that may be uncommon in the

NEET population, especially in the inactive segment. The literature has shown how experiencing unemployment and social exclusion impacts the probability of starting a self-employment activity, as emerged in a large study conducted in 11 European countries (Dvoulety et al., 2018). The path from unemployment to self-employment may be difficult for NEETs, as the possibility of self-employment is predicted by the environmental context and support, personal and psychological characteristics, and by the possibility of developing a specific business idea (Nabi et al., 2015).

Discussion

In this article, the main non-cognitive skills associated with NEET have been reviewed from the perspective of the contemporary theory of skills formation (Heckman & Rubinstein, 2001). Acting to improve individuals' cognitive and non-cognitive skills in high-quality formative paths and from a lifelong perspective is one of the objectives of the United Nations Educational, Scientific and Cultural Organization (UNESCO) Agenda for 2030 (UNDESA, 2015). Cognitive skills alone may not protect teenagers from transitioning through the NEET state. HCT highlights the need for a strong interplay of cognitive and non-cognitive skills to attain a successful school-to-work transition. Notwithstanding the focus of contemporary economic literature on non-cognitive skills, HC is still simply measured as the costs of formal and informal education.

The interplay of cognitive and non-cognitive skills for NEET prevention

Motivation, including future expectations, educational aspirations, and investing active efforts in the search process, has a central role in preventing the NEET condition. Getting a job and receiving a salary on a continuous basis may be interpreted as a developmental task (Wrosch & Heckhausen, 1999) for the transition to adulthood. NEETs fail to meet this deadline. The timing and sequences of markers of adulthood have been deeply scrutinized in the literature. In general, in Western postindustrial societies, the period of adolescence has become extended following macrostructural and interconnected conditions (Arnett, 2000). As a consequence, events such as entering the labor market, leaving home, marriage, and parenthood have been delayed. Italy, in particular, is one of the European countries with the longest permanence of young people in the parental nest (Micheli & Rosina, 2010). A similar situation can be found in other Southern European countries such as Greece, Spain, and Portugal. In Southern European countries, a late transition to adulthood is negatively correlated with educational and occupational achievements (Alesina & Giuliano, 2010; Billari & Tabellini, 2010). Such a general picture may negatively impact young people's self-esteem and self-efficacy.

Human agency is particularly important at times of change, when young people exit from a pre-structured track, as happens in the school-to-work transition (Schoon & Heckhausen, 2019). The literature has documented a relationship between a low sense of self-efficacy and becoming NEET (Katznelson, 2017; Simões et al., 2017).

The large-scale consequences of this relationship are still to be addressed since it is known from social cognitive theory that self-efficacy is a strong promoter of prosocial behavior across life domains (Bandura, 2001). Nevertheless, the specific role of self-esteem, as part of a more general self-representation in relation to NEET has yet to be ascertained. One study reviewed herein (Mendolia & Walker, 2015) found an association between self-esteem and the NEET state. Another study (Orth et al., 2012) did not report an association but documented that self-esteem correlates with job satisfaction.

The concept of internal locus of control has been advocated in terms of protection against NEET (Mendolia & Walker, 2015). The locus of control is correlated to the personality traits of emotional stability and openness to experience (Almlund et al., 2011). However, having an internal locus of control would not help students with low socioeconomic status to ameliorate their condition. The fact that individual agency is shaped by socioeconomic background is well known in the sociological domain, and it has been labeled “bounded or structured agency” (Shanahan, 2000). What is still unclear is the relation between NEET and the stability of the locus of control (Cobb-Clark & Schurer, 2013), namely, if longitudinal adjustments of the locus of control may contribute to changing the NEET status. While in general the locus of control stabilizes during adolescence, it may be (at least to a certain degree) malleable. This might be worth considering from a policy perspective.

We remark that the concepts of motivation, locus of control, self-efficacy, and self-esteem have been differentiated in psychological theory (Nowicki & Duke, 2016). However, the applied literature presents a certain overlap of these constructs, which sometimes have been used interchangeably. This makes it hard to assess the specific contribution of each component concerning NEET and to target a clear identification of the effect.

Personality traits may be discussed separately from the other non-cognitive skills considered in this review, even though recent theory has proposed the integration of personality, motivation, and development (Dweck, 2017). Personality traits are virtually stable; hence they are more difficult to target by intervention. The big-five factors model of personality and its putative connection with NEET has not been addressed by empirical research. Personality traits are somehow related to other non-cognitive skills associated with the NEET state, such as motivation, coping, self-esteem, and the locus of control (Mendolia & Walker, 2015). Yet the big five represent a seminal model of personality that should be specifically targeted by future studies in relation to NEET. Contemporary authors have highlighted the connection of the big five with the principles of positive psychology (Fredrickson, 2009), namely, “the study of the conditions and processes that contribute to the flourishing or optimal functioning of people, groups, and institutions” (Gable & Haidt, 2005). These dimensions, however, are still underestimated as putative protective factors against NEET.

Policies should take into consideration that non-cognitive skills represent the tangible outcome of contextual factors that act on the individual. For instance, self-esteem is strongly influenced by determinants such as family background, social position, and trauma history. Motivation has also been described from a situationist perspective (Nolen et al., 2015). Innovative policies directed to NEETs should

ponder the role of these preconditions, and consequently, should be properly adapted and modified to keep into account contextual influences.

Both internships and apprenticeships, as long as they are of high quality, promote non-cognitive skills (Halpern, 2009), improving young people's labor outcomes. Southern European countries should improve access to and quality of internships and apprenticeships. This is especially true for countries with high NEET prevalence, such as Italy, Greece, and Spain, which have less developed and effective dual educational systems than Germany or Nordic countries. There is evidence from reviewed studies on the role of internships/apprenticeships in favoring a successful school-to-work transition. However, it is still unclear which specific non-cognitive components may play a role in protecting teenagers from becoming NEETs. While positive in principle, apprenticeships and internships may not be feasible in some countries, such as Italy, where internships are often unpaid. Moreover, the possibility of starting a high-quality internship or apprenticeship program (Smits, 2006) may require access to relevant social networks, thus being an obstacle for disadvantaged social classes.

Which policies?

Notwithstanding, the literature reviewed herein has documented empirical associations between non-cognitive skills and NEET without putting forward any causal assumptions, and we can provide some general guidelines and suggestions for public policies. These should be discussed at a country level since the specificity of the educational and labor market systems provides the macro-level framework to transform general policies into proper actions. In addition, the social and economic context should be taken into account. The current economic crisis following the COVID-19 pandemic, as well as the Great Recession of 2008 (Bell & Blanchflower, 2011), have presented novel challenges for youth employment. Nevertheless, on the basis of contemporary literature, we can highlight some general policy principles. First, innovative prevention strategies should be urgently put into practice. Second, early interventions, starting with childhood and parent education, while challenging to be implemented, are very important for the outcome of adolescent and adult life (Campbell et al., 2014). Third, policymakers need to focus on implementing proper intervention strategies addressed to adolescents and young people.

The NEET condition can be prolonged and may seriously affect an individual's life (Bynner & Parsons, 2002), but can be contrasted or mitigated by intervention. The importance of effective policies for NEETs is seen in recent research that has shown how the NEET state is a marker of subsequent long-term scarring associated with unemployment (Ralston et al., 2021) and mental health (Basta et al., 2019). Although policies aimed at sharing resources such as welfare and education can act against inequality (Piketty, 2015; Stiglitz, 2012), these should be contextualized to the specificity of the NEET case. Even with augmented resources on social policies, poorly targeted interventions may not allow NEETs to transform opportunities into plans and actions (Nussbaum, 2011; Sen, 2009) and ameliorate their status (Atkinson, 2015).

There is evidence that non-cognitive skills can be actively targeted and reinforced by interventions in childhood (Heckman et al., 2010). Agency is a peculiar non-cognitive skill that should be promoted in all formative tracks. Individualized mentoring programs founded upon an integrated development of adolescents' non-cognitive skills, such as the EPIS program in Portugal (Martins, 2010), have already proved to be effective in preventing school failure and should be applied for NEET prevention. Long-term, secure mentoring relationships are decisive aspects of the school-to-work transition for young adults at risk of marginalization.

Multidimensionality and interdisciplinarity are important features that should characterize every NEET intervention program. Interventions with too narrow or too specific focus would not adequately take into account the interdependence links that are essential for teenagers' development. Motivating young adults under pressure or living in the NEET condition has long been recognized as a central component of intervention (Katznelson, 2017). Programs should specifically focus on empowering intrinsic motivation, leading NEETs to be involved in activities such as high-quality internships and apprenticeships for the inherent satisfaction of such actions. Interventions should promote teenagers' self-regulation, "which concerns how people take in social values and extrinsic contingencies and progressively transform them into personal values and self-motivations" (Ryan & Deci, 2000). As to the possibility of self-employment for NEETs, this should be carefully considered only after the implementation of programs of mentoring and support, centered on goal-setting, monitoring, and feedback (Locke & Latham, 1990). While investing in the creation of highly demanding activities such as innovative start-ups may be not realistic for this segment of the youth population, intervention programs focused on the development of non-cognitive skills and supporting the creation of a personalized business plan may allow NEETs to start more delimited and collaborative activities, such as in the field of agriculture or handicrafts. For instance, a strong support program has been recently implemented in Italy with a large-scale national project that received public funding (*Yes I Startup*).³ The major goal of this program is the development of a business plan and management skills. In addition, interventions focused on career development have proven to be effective in terms of improving non-cognitive skills and protecting young people in the labor market (Kemple & Willner, 2008).

Cognitive and non-cognitive skills are intrinsically related and should both be targeted by intervention programs. The ELET and NEET phenomena are only partly overlapping and show partially different geographical distributions. Since a large segment of NEETs have not completed compulsory education, investment in education and school completion is also related to NEET prevention.

Limitations

A limitation of the present study is that it only focused on some specific dimensions of non-cognitive skills. A general problem of the literature reviewed herein, almost

³ Ente Nazionale per il Microcredito, <https://www.microcredito.gov.it/in-corso/yes-i-start-up.html>.

unexplored, is given by the possibility of reverse causality that may affect published studies. Take, for instance, motivation: completing education and getting a job may enhance young people's motivation. This would make it difficult to disentangle the direct effect on NEET prevention played by motivation itself. Investigating this issue with longitudinal designs is open for future research. Another common shortcoming of the studies reviewed herein is the difficulty in assessing the magnitude of the effect, due to infrequent reporting of statistical measures of effect size. Additionally, putative mediators or moderators of the effect of non-cognitive skills on NEET have rarely been considered.

It is worth adding a critical appraisal of the NEET construct, which is problematic and should not be taken for granted (Furlong, 2006). Indeed, it is difficult to discriminate whether "NEET" can be proposed as an independent construct or whether it just reflects the outcome of a life trajectory typical of marginalized youths. A particularly critical point is that the NEET category is dichotomous and does not reflect the dynamics of the construction of young people's identities. This makes it hard to assess the specific contribution of non-cognitive skills to the NEET state.

It also has to be mentioned that the NEET definition includes young people who are temporarily not working or studying since they are taking care of a child, a parent/relative, or they are working in the informal care sector. While these subjects would not be classified as NEETs in Japan, they do in Europe. However, their situation is completely different from that of inactive young people who are not carrying out care work. In a sense, adolescents and young people doing care work, at different levels, are carrying out spontaneous work in the informal and domestic sectors. Moreover, they may be enrolled in training activities in non-formal contexts. The NEET category, by construction, makes these realities invisible. Another relevant problem with the NEET definition is that there is not a shared age range for classifying NEETs. Even official statistics normally provide multiple age ranges, such as 15–24, 15–29, and 15–34 years. Adopting different age ranges has different implications in terms of the prevalence of NEET, risk factors, and intervention.

Having stated the previous limitations, the NEET concept has the advantage of allowing policymakers to focus on a segment of young people who share the commonality of a peculiar and potentially at-risk transition to adulthood. In this spirit, the present review discussed putative non-cognitive skills correlating with the NEET state.

General conclusion and directions for future research

This review documented that motivation, future expectations, educational aspirations, goal attainability, investing in active efforts, and intrapersonal agency can actively protect teenagers from becoming NEETs. Future studies could discuss other critical factors concerning NEET, including neurobehavioral changes, traits (such as temperament and attachment styles), psychological factors such as metacognition, self-regulation, self-handicapping, and personal narratives (such as scripts, stories, and significant memories). Moreover, the relation of non-cognitive skills should be studied in relation to gender, ethnicity, migration, and

teenagers' mental health and well-being. The capability approach (Sen, 2001, 2009), which provides a detailed framework to study issues such as gender, diversity, and minorities (Chiappero-Martinetti & Sabadash, 2014), may be integrated with the HCT as a theoretical framework for future investigations.

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Conflict of interest The corresponding author states that there is no conflict of interest.

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