Capacity to aspire in high school students: theoretical definition and measurement

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1. Introduction

The high school period represents the time when young people shape their career aspirations, choosing from various educational or working pathways. This process involves the development of a cultural ability known as the "capacity to aspire" (Appadurai, 2004), which indicates the ability to represent the future, navigate the dense combination of nodes and pathways, set goals and make plans to reach them. This concept has been widely applied in educational research to understand students' aspirations, especially those from disadvantaged backgrounds. Indeed, social and material resources significantly influence the development of career aspirations (Mazenod et al., 2019), underscoring the need to understand how poverty traps can manifest as constraints internal to individuals, such as impaired agency or lack of hope, leading to a compromised capacity to aspire.

Although the role of the capacity to aspire has been recognized as pivotal in enabling aspirations (Bok, 2010), a clear and comprehensive operational definition of the concept, as well as its measurement, remains elusive in the existing literature. The present work aims to address this gap by proposing an operationalization of students' capacity to aspire and identifying the proper dimensions and indicators to obtain an appropriate assessment. To ensure the rigor of the research, the study employs both exploratory and confirmatory factor analysis to explore and validate the underlying factorial structure.

The remainder of the paper is structured as follows: Section 2 provides a theoretical definition of the capacity to aspire and delineates its hypothesized theoretical dimensions; Section 3 describes the data collection procedure and the adopted measures; Section 4 reports the main results obtained from statistical analysis; and Section 5 includes a discussion of the results and some conclusions.

2. Theoretical definition of capacity to aspire

Appadurai (2004) describes the capacity to aspire as the ability to read "a map of a journey into the future" (p. 76). According to this metaphor, aspiration development involves a navigational capacity in the possible future pathways, where factors such as socio-economic background can affect the destinations (the goals) and the details on the map (how to reach those goals).

Appadurai's concept applies to several contexts, including high school students' career aspirations (Bok, 2010; Mazenod et al., 2019). Various psychological factors contribute to aspiration development, reflecting what Appadurai has defined as the "capacity to aspire". First, Appadurai's framework underscores the importance of being future-oriented, which relates to how individuals prepare for their future. This attitude aligns with the notion of *future concern* (Savickas and Porfeli, 2012), defined as the extent to which an individual is oriented to and involved in preparing for the future. In the educational context, concern about the future helps students look ahead and prepare for possible academic and working opportunities. However, the concern is not enough; active *exploration* of various career alternatives is crucial for setting goals and deeply evaluating current choices (Luyckx et al., 2005). Indeed, considering different pathways helps students make informed decisions about their future. *Planning* in detail when, where, and how to act to achieve one's goals and preparing for potential obstacles represent the next steps to turn intentions into actions (Sniehotta et al., 2005), ensuring that concrete actions and strategies support aspirations.

Moreover, the literature highlights that people's effort to navigate the dense combination of

pathways and reach their goals is also related to their *locus of control* and *agency* (see, among others, Rottinghaus et al., 2012; Pham & Murray, 2019). The locus of control refers to a generalized attitude, belief, or expectancy regarding the nature of the causal relationship between one's behavior and its consequences (Rotter, 1966). The agency consists of the human capability to influence one's functioning and the course of events through intentional actions (Bandura, 2006), involving intentionality, forethought, self-reactiveness, and self-reflectiveness. Students with an internal locus of control believe that their efforts can lead to desired results and thus are more likely to take the initiative and persist in facing challenges. A high level of agency leads to proactive steps toward one's goals, maintaining motivation, and overcoming barriers.

Finally, as strongly underlined by Appadurai, aspirations are "always formed in the thick of social life" (Appadurai, 2004, p.67). Thus, the capacity to aspire also reflects the ability to collectively voice their needs and visions for a future with more favorable social, cultural, and economic circumstances. This facet ties into Bandura's (2000) concept of *collective efficacy*, defined as the individual's perception of the ability of their collective to be effective in achieving results as an outcome of group action. In educational settings, students who perceive strong collective efficacy among peers and teachers are more likely to feel supported and confident in their pursuits, significantly improving their capacity to aspire (Kellett et al., 2009; Cheung et al., 2013).

In sum, high levels of capacity to aspire should be reflected in individuals' (i) concern about their future (*Future concern*), (ii) belief in having control over their future (*Internal locus of control*), (iii) active exploration in breadth and depth of different educational and/or working alternatives (*Exploration*), (iv) belief in their ability to achieve the desired goals (*Agency*), (v) action planning to reach one's goals and defining coping strategies for potential obstacles (*Planning*), and (vi) confidence in their generation's capacity to change living conditions and achieve educational and/or working goals (*Collective efficacy*). All six dimensions of the construct "capacity to aspire" mentioned above are depicted in Figure 1.

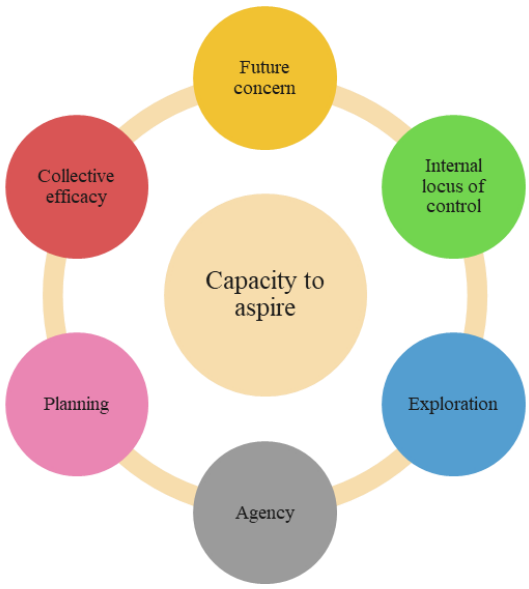

Figure 1 – Theoretically-defined dimensions of the "capacity to aspire" construct

3. Data collection and measures

The study involves a convenience sample of students aged 16 to 19, attending the third, fourth, and fifth years of upper secondary school in Naples, Italy. After a data cleaning process, n=191 students were considered for the analysis. Most participants are female (58%) and came from technical-professional schools (49%) followed by high schools (36%).

The six dimensions of the capacity to aspire were measured using a set of Likert-type indicators

with a 5-point Likert response scale. Specifically, for the dimensions of future concern, locus of control, exploration, agency, and planning, the scale ranges from 1 = Strongly disagree to 5 = Strongly agree. Conversely, the collective efficacy item response scale ranges from 1 = Not at all able to 5 = Completely able. The initial pool of developed indicators[1] included three items for future concern (adapted from Savickas et al., 2012; item example: "I am aware that today's choices shape my future"), two items for internal locus of control (adapted from Farma et al., 2000; item example: "I believe a person can truly be the author of his own destiny"), six items for exploration (adapted from Porfeli et al., 2011; item example: "I think about how I could fit into many different educational and/or working paths"), four items for agency (adapted from Rottinghaus et al., 2012; item example: "I feel able to make a correct educational and/or job choice for the future"), four items for action and coping planning (adapted from Lo Presti et al., 2012; item example: "I know exactly what I have to do to achieve my educational and/or working goals"), and four completely new items for individual perception of collective efficacy among one's generation (item example: "People belonging to my generation can act to change their living conditions and have a better future"). Hence, a total of 23 items were considered to obtain a measure of the "capacity to aspire" construct.

4. Statistical analysis

The capacity to aspire has been conceived as a multidimensional latent variable measured by Likert-type items. Accordingly, exploratory and confirmatory factor analyses (Thompson, 2004) were employed to explore and validate the underlying factorial structure. The original sample was split into two nearly equal groups of n_1=100 and n_2=91 observations. Exploratory factor analysis (EFA) was carried out on the first sub-sample to identify the underlying dimensions within the considered items; then, the emerged factorial structure was validated on the second sub-sample by exploiting the confirmatory factor analysis (CFA). To ascertain the sampling adequacy for EFA, the *Kaiser-Meyer-Olkin* (KMO) test and *Bartlett's test of Sphericity* were conducted, reporting a satisfactory correlation between variables: the KMO value was equal to 0.76, and *Bartlett's test of Sphericity* was significant at α=0.001. At the first round of EFA, the number of factors was selected according to the *parallel analysis* suggesting four latent dimensions. Items with very low communality, low factor loadings, or high cross-loadings were removed, one at a time, within an iterative process. The final solution, depicted in Figure 2, includes 13 of the original 23 items, measuring four latent dimensions and explaining 55% of the variability. The *maximum likelihood* method was used to estimate model parameters, and an *oblimin* rotation was applied to improve factor interpretation. The list of the selected items is in the Appendix.

Results from the CFA based on the emerged factorial structure with the selected 13 items confirmed the adequacy of the measurement model. Most items had factor loading values greater than 0.7, and fit measures support the overall good fit of the model (CFI = 0.997; TLI = 0.970; RMSEA = 0.042; SRMR = 0.066). In addition, a comparison between the four first-order correlated factors model and a simpler overall second-order factor model showed no significant difference ($\Delta\chi^2 = 0.10$; *p*-value$= 0.95$), suggesting that the four first-order latent variables represent facets of a single general factor herein named "capacity to aspire".

5. Discussion and conclusion

The present work focused on developing and validating a comprehensive measure to assess high school students' capacity to aspire. Based on the EFA and according to the results obtained from CFA, a set of indicators was selected and tested for their adequacy. The findings revealed a factorial structure with four main dimensions of the capacity to aspire and a second-order factor reflecting the general concept. The four specific dimensions are: Future concern and exploration

[1] The set of considered indicators is available upon request to the first author.

(Factor1), Collective efficacy (Factor2), Planning (Factor3), and Agency (Factor4). The internal locus of control dimension was completely discarded during the item selection, highlighting its non-significant contribution to the capacity to aspire measurement. Future research could test the emerged factorial structure on a larger sample and explore the measurement invariance of the proposed scale according to some socio-demographic variables (e.g., gender). Another future study route could investigate the relationship between students' socio-economic backgrounds and career aspirations, mediated by the capacity to aspire. Results from such studies could inform policymakers about possible interventions to foster material resources and cultural ability, thereby expanding aspirational capacity among disadvantaged groups.

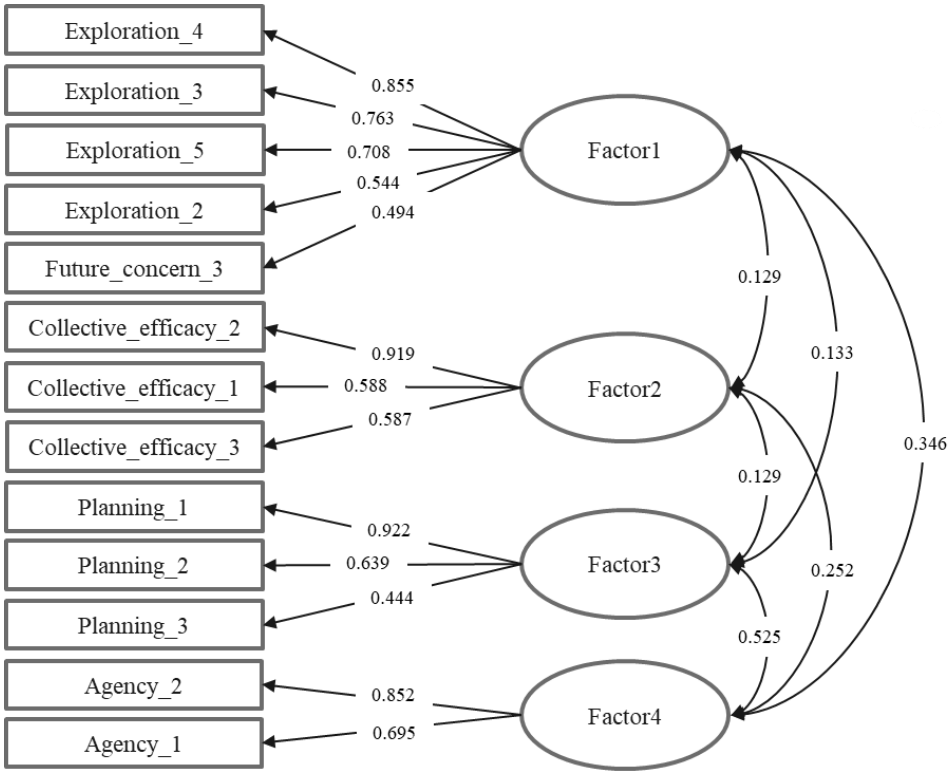

Figure 2 – Diagram of the final EFA model

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Appendix

Selected items to measure the capacity to aspire:

Exploration_2:	Penso a come potrei adattarmi in futuro ai diversi percorsi formativi e/o lavorativi
Exploration_3:	Penso a come potrei adattarmi in futuro ai diversi percorsi formativi e/o lavorativi
Exploration_4:	Mi informo in modo approfondito sui requisiti necessari per svolgere il percorso formativo e/o lavorativo che mi interessa di più

Exploration_5:	Cerco di capire cosa posso fare per aumentare le mie possibilità di accedere al percorso formativo e/o lavorativo che ho scelto
Future_concern_3:	Sono consapevole che le scelte che faccio oggi influenzeranno il mio futuro
Collective_efficacy_1:	Quanto credi che i ragazzi della tua generazione siano capaci di immaginare diverse scelte formative e/o lavorative tra cui scegliere?
Collective_efficacy_2:	Quanto credi che i ragazzi della tua generazione siano capaci di realizzare i propri progetti formativi e/o lavorativi?
Collective_efficacy_3:	Quanto credi che i ragazzi della tua generazione siano capaci di agire per cambiare le proprie condizioni di vita ed avere un futuro migliore?
Planning_1:	Conosco esattamente cosa devo fare per raggiungere i miei obiettivi formativi e/o lavorativi
Planning_2:	Ho già programmato una serie di azioni da svolgere per raggiungere i miei obiettivi formativi e/o lavorativi (ad es. frequentare corsi di formazione, mettere da parte dei soldi, contattare strutture o persone qualificate)
Planning_3:	So come affrontare eventuali problemi che potrei incontrare durante il mio futuro percorso formativo e/o lavorativo
Agency_1:	Mi sento in grado di fare una corretta scelta formativa e/o lavorativa per il futuro
Agency_2:	Mi sento in grado di affrontare con successo il processo di cambiamento formativo e/o lavorativo che mi aspetta