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Visions about future: a new scale assessing optimism, pessimism, and hope in adolescents

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Abstract This article reports the development and psychometric properties of visions about future (VAF), an instrument assessing hope, optimism, and pessimism. Three different studies involving Italian adolescents were conducted. With the first study 22 items were developed and the factor structure was verified. The second study, involving a second sample of adolescents, confirmed the instrument's multidimensional structure and evaluated the convergent validity of VAF with self-report measures of hope, optimism, and pessimism. Moreover, it showed that VAF correlated with life satisfaction and career adaptability. The third study involved a third sample of adolescents and verified the measurement invariance across gender.

Résumé. Visions du futur: Une nouvelle échelle évaluant l'optimisme, le pessimisme et l'espoir des adolescents. Cet article rend compte du développement et des propriétés psychométriques de l'instrument Visions du Futur (VDF) qui évalue l'espoir, l'optimisme et le pessimisme. Trois études différentes impliquant des

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adolescents italiens ont été conduites auprès d'adolescents italiens. Dans la première étude, 22 items ont été développés et la structure factorielle a été vérifiée. La seconde étude, menée auprès d'un deuxième échantillon d'étudiants, a confirmé la structure multidimensionnelle de l'instrument et a évalué la validité convergente du VDF avec des mesures auto-reportées d'espoir, d'optimisme et de pessimisme. De plus, cette étude montre que le VDF corrèle avec la satisfaction de vie et l'adaptabilité de carrière. La troisième étude porte sur un troisième échantillon d'adolescents et vérifie l'invariance de la mesure selon le sexe.

Zusammenfassung. Visionen über die Zukunft: Eine neue Skala, die Optimismus, Pessimismus und Hoffnung in Jugendlichen misst. Dieser Artikel beschreibt die Entwicklung und die psychometrischen Eigenschaften der Visionen über die Zukunft (VAF), einem Instrument, welches Hoffnung, Optimismus und Pessimismus misst. Drei verschiedene Studien mit Italienischen Jugendlichen wurden durchgeführt. In der ersten Studie wurden 22 Items entwickelt, sowie die Faktorenstruktur belegt. In der zweiten Studie wurde anhand einer zweiten Gruppe von Jugendlichen die multidimensionale Struktur des Instruments bestätigt und die konvergente Validität der VAF anhand selbst-berichteter Messungen von Hoffnung, Optimismus und Pessimismus bestätigt. Zudem zeigte sich, dass VAF mit Lebenszufriedenheit und beruflicher Anpassungsfähigkeit korreliert. Die dritte Studie, ebenfalls mit einer Gruppe von italienischen Jugendlichen, bestätigte die Messinvarianz über die Geschlechter hinweg.

Resumen. Visiones Sobre el Futuro: Una Nueva Escala de Evaluación del Optimismo, Pesimismo y Esperanza en Adolescentes. Este artículo informa sobre el desarrollo y propiedades psicométricas de Visiones Sobre el Futuro (VAF), un instrumento de evaluación de la esperanza, el optimismo y el pesimismo. Para ello se realizaron tres estudios diferentes con adolescentes italianos. Con el primero se desarrollaron 22 ítems y se verificó el factor de estructura. El segundo estudio con una segunda muestra de adolescentes, confirmó la estructura multidimensional del instrumento y evaluó la validez de convergencia de VAF con medidas de autoinforme de la esperanza, el optimismo y el pesimismo. Por otra parte, se demostró que VAF correlaciona con la satisfacción con la vida y la capacidad de adaptación en la carrera profesional. El tercer estudio incluyó una tercera muestra de adolescentes y verificó la invariancia de medición a través del género.

Keywords Hope · Optimism · Pessimism

Introduction

Recent socio-economic changes, instability, and job insecurity stimulate negative perceptions about the future in adolescents, particularly uneasiness, discomfort and confusion, and limited propensity to think about multiple options, pathways, and improvements in living conditions. Taking into account these elements, the Life Design approach devotes attention to promoting in adolescents the skills and

knowledge relevant for the analysis of non-linear causalities, ecological and multiple contexts, complex dynamics, and frequent transitions with the aim of prompting meaningful activities that facilitate self-making, identity shaping, and career construction (Nota, Ginevra, & Santilli, 2015). More specifically, it emphasizes the need to support adolescents in building career trajectories by taking into consideration resources that might help them cope with and anticipate frequent employment transitions and successfully deal with current job market and future occupations. Within the Life Design approach, careful attention is then given to new and important constructs such as career adaptability and a positive view of the future—specifically, hope, optimism, and lack of pessimism—useful for adolescents in positively projecting themselves toward their own future and career planning (Savickas et al., 2009).

Although separate lines of theory and research have characterized hope, optimism, and pessimism, the terms have frequently been used interchangeably, with optimists (pessimists) sometimes considered as 'hopeful' toward the future (e.g., Affleck & Tennen, 1996) and pessimists as 'hopeless' (e.g., Bryant & Cvengros, 2004). On the same line of reasoning, Scioli et al. (1997) consider hope and optimism (pessimism) as related but significantly different in constructs. Hope is viewed as an affective variable with cognitive components, rooted in early trust experiences and influenced by external and collaborative control beliefs, while optimism (pessimism) is considered as a cognitive variable, consisting of a generalized belief in positive (negative) outcomes. Due to the remarkable relevance of hope, optimism, and lack of pessimism in adolescents' career construction, we are interested in developing a single instrument useful in assessing these three dimensions.

Hope

Within counseling literature, hope has been conceptualized in a variety of ways. Scioli et al. (1997) and Scioli, Ricci, Scioli, and Nyugen (2011) considered hope as a future-directed, affective variable, sustaining action and affecting thoughts and behaviors. It is based on biological, psychological, and social resources and consists of mastery, attachment, survival, and spiritual systems. It is theorized to be an emotion albeit with cognitive components (Averill, Catlin, & Chon, 1990; Scioli et al., 1997). Staats (1989) considered hope to comprise two components, a cognitive one regarding the expectations that a future event is likely to occur, and an affective one related to expectations of pleasant events or good consequences. In contrast to this position, Snyder (2000) conceptualized hope as a cognitive construct that reflects people's motivation and capacity to strive toward personally-relevant goals. Hope depends more particularly on two cognitions: agency thinking and pathway thinking. Agency refers to the determination to start and sustain the effort needed to achieve goals and wishes; pathway, on the other hand, reflects plans needed for achieving a goal. These components are strongly related to each other and operate jointly to provide hope.

According to research findings, hope has been found to be related to several positive developmental outcomes. Studies involving adolescents provide evidence for positive correlations between hope and, respectively, general life satisfaction and self-regulation; negative correlations are instead reported with psychological distress and maladjustment, with internalizing and externalizing behaviors (Gilman, Dooley, & Florell, 2006; Jiang, Huebner, & Hills, 2013). Hope is also associated with positive career-related variables such as vocational identity, career decision self-efficacy, and career-related beliefs (Amundson et al., 2013; Yakushko & Sokolova, 2010) and with educational achievement (Kenny, Blustein, Haase, Jackson, & Perry, 2006).

Several quantitative instruments are described in the literature and used to assess hope in adolescents. For example, the Hope Scale (Snyder et al., 1991), composed of 12 items, and the State Hope Scale (Snyder et al., 1996), composed of 6 items, both focus on assessing hope as a cognitive concept. In a more clinical setting, Hinds and Martin (1988) developed the Hopefulness Scale for Adolescents, composed of 25 items, to assess the degree to which an adolescent possesses a comforting, life-sustaining belief that a personal and positive future exists. In addition, Park and Peterson (2006) developed the Values in Action Inventory for Youth (VIA-Y) survey where hope and optimism are addressed among the 24 character strengths presented as positive subjective experiences and contrasted with other traits described as being positive. Several other researchers have developed items or use specific subscales of other instruments to test hope. For example, Gerard and Booth (2015) recently measured hope using 10 items from the hopefulness subscale of the Child/Adolescent Measurement System (Doucette & Bickman, 2001). Specifically, this measure assesses a general sense of hope related to actual life situations (e.g., "I feel good about what's going on in my life right now"). Schmid, Phelps, and Lerner (2011) measured hope for the future with 12 items developed in the 4-H Study. It assesses the expectations of the likelihood that certain future outcomes will occur e.g., graduating from college, being healthy, having a job that pays well, and having a happy family life. None of these instruments, however, assesses students' actual hopes about their general future projects and wishes.

Optimism and pessimism

Scheier and Carver (1985) defined optimism as a stable predisposition to "believe that good rather than bad things will happen" (p. 219). It is relevant in future planning: having higher expectations is compelling in that it drives a person toward putting in more efforts and persisting in order to reach relevant future wishes, as well as positively facing experiences and challenges. Dispositional optimism was initially conceptualized as a unitary bipolar trait, with optimism at one end of the continuum and pessimism at the other (Carver & Scheier, 2013). However, numerous studies suggested that, rather than one, two separate subtraits reflect positively-framed optimism and negatively-framed pessimism (Segerstrom, Evans, & Eisenlohr-Moul, 2011). In particular, according to Benyamini (2005) individuals have a given level of optimism and of pessimism across different life circumstances;

they can defensively express pessimism in public but be optimist in their private lives. Possibly, people across domains and time cope with anxiety related to future wishes by adopting defensive pessimism as a strategy, reporting low expectations toward future events even though they earlier experienced successes; and at the same time, they experience optimism stemming from prior successes (Benyamini, 2005). This might explain the lack of correspondence between the two constructs in previous studies (Marshall, Wortman, Kusulas, Hervig, & Vickers, 1992). Bryant and Cvengros (2004), using the Life Orientation Test-Revised (LOT-R; Scheier, Carver, & Bridges, 1994), found that almost 13 % of study participants, showed both lowest or highest scores respectively on optimism and pessimism subscales, thus sustaining "a two-dimensional conceptualization that distinguishes between the rejection of pessimism and the endorsement of optimism as different forms of generalized future expectancy" (p. 22).

The distinction between being an optimist versus not being a pessimist is consistent with results on the differential effects of positive versus non-negative thinking on psychological adaptation. For instance, in adolescents, higher scores on optimism correlate with a low psychological maladjustment, higher life satisfaction and self-esteem, lower levels of aggressiveness and higher assertiveness, positive humor, and a stronger immune system (Chang, 2001). As regards work outcomes, Patton, Bartrum, and Creed (2004) found that optimism predicted career goals, career planning, and career exploration in a group of high school students. Additionally, Rottinghaus, Day, and Borgen (2005) reported positive correlations between optimism and career adaptability, and found that more optimistic and adaptable university students showed higher comfort with, and were more engaged in, their educational and career planning. On the contrary, evidence exists that pessimism is related to lower life satisfaction, greater perceived stress, and higher depressive symptoms (Chang, 2001), with lower career decision-making and school achievement (Pattom et al., 2004).

To measure optimism and pessimism in adolescence the Life Orientation Test (Scheier & Carver, 1985) and Life Orientation Test-Revised (LOT-R; Scheier et al., 1994), both composed of eight items, are generally referenced in the literature. Despite their extensive usage, a number of critical issues have been raised about these scales regarding, for example, whether they assess one dimension (optimism) or two dimensions (optimism and pessimism; Herzberg, Glaesmer, & Hoyer, 2006). With Italian adolescents, Monzoni, Steca, and Greco (2014) showed that the LOT-R can be considered as a generalized uni-factorial measure of dispositional optimism. Nevertheless, we were interested in exploring optimism and pessimism more in depth in relation to the contextual and actual situation perceived by adolescents.

The degree of overlap and divergence between hope, optimism, and pessimism suggests that they could also be considered as indicators of a single global dimension reflecting positive orientation toward the future, as correlating but distinct constructs with hope focused on personal future goals and wishes, and of optimism (juxtaposed next to a pessimistic vision) as a general expectancy of positive future results (Bryant & Cvengros, 2004). More recently, Sun and Shek (2012) confirmed that hope, optimism, and lack of pessimism could be considered

as internalized constructs referring to possible outcomes on beliefs toward the future. Research findings highlight that having a positive view of the future i.e., hope, optimism, and lack of pessimism, plays a crucial role in adolescents' growth, as it is positively connected with their behavior, health, and well-being (Sun & Shek, 2012). Specifically, it is related to fewer risks for antisocial behaviors, higher educational aspirations and school engagement, and greater stress resistance and resilience (Brown, 2015). In the career development process, planning a career or an educational goal, implementing a professional or educational choice and/or persisting in an educational or professional path, and at the same time facing barriers and difficulties, may reveal hard tasks for an adolescent when hope and optimism are limited and pessimism toward the future is high (Niles, Amundson, & Neault, 2011; Savickas, 2013). On the basis of the aforesaid reasoning, we can argue that with low hope and optimism and high pessimism, adolescents might struggle constructively with engaging in educational and professional planning, and adults, too, might struggle to be constructively involved in actions tailored to their career progression and to positively overcome work transitions.

Research goal

To date, no scale has more inclusively assessed all constructs of hope, optimism, and pessimism. Based on the argument that these three constructs could all be important components of positive views about future, we set to develop a scale that measures them. Although other measures have been developed for children and adolescents, there has been no appropriate scale assessing these constructs in adolescents involved in career planning, wherein a future orientation is the primary focus (Creed, Patton, & Bartrum, 2002). Taking into account this information, the aim of this work was to develop and validate an assessment questionnaire that incorporates these constructs and focuses on how adolescents view their future. Moreover, considering the reduction of social and economic resources that many Western countries, such as Italy, are experiencing due to global crisis, and the consequently increasing feelings of insecurity, uncertainty, and negative thoughts about the future, we were particularly interested in how adolescents view their future in this moment. Therefore, we developed a short comprehensive questionnaire, visions about future (VAF), for adolescents that assesses malleable and manageable (state) orientation toward hope, optimism, and pessimism.

Three studies with three independent samples of adolescents were conducted. The first study was carried out in two phases in order to develop statements that explore the constructs and to then verify the instrument's psychometric requisites, such as reliability and the structure of the scale. The second study examined the factorial structure's stability and the instrument's convergent and concurrent validity. The third aimed at verifying the factorial structure's gender invariance.

Study 1: scale construction and exploratory factor analysis

The first study goals were (a) to generate a range of items to represent the dimensions of hope, optimism, and pessimism; and (b) to examine the factorial structure and reliability of the VAF questionnaire. An initial pool of 22 items was generated by a team of three experts on career guidance and counseling (Clark & Watson, 1995) to assess the target constructs. The experts referred to hope, optimism, and pessimism as related but distinct constructs. In terms of hope, we referred on one side to the suggestions of Scioli et al. (1997), Averill et al. (1990), Staats (1989), and Pacico, Bastianello, Zanon, and Hutz (2013), who considered hope, also in adolescents, as an affective state sustaining future wishes, albeit with a cognitive component. On the other side, we considered Hartung's (2011) and Guichard's (2005) contributions about the crucial role of emotional-affective components in the self-construction process, in which an individual plans for and chooses work and life roles with intentionality. When dealing with items focused on optimism and pessimism, we considered Herzberg et al.'s (2006) suggestion on distinguishing between optimism and pessimism and considering them as an orientation toward expecting general positive or negative results. Additionally, in constructing the items, following guidelines proposed by Clark and Watson (1995), a specific care was also undertaken to ensure that the wording of the items was simple, accessible to adolescents, and avoided complex or 'double-barreled' structuring. Items dealing with pessimism toward the future were negatively worded, with high scores indicating high levels of pessimism.

To assess content validity, these items were reviewed by three experts who had knowledge of scale development in career research and vocational guidance. The experts checked the content appropriateness and clarity of each item, and one item was revised. A pilot study was conducted with ten (five boys and five girls) high school students ($M_{age} = 17.20$; $SD = 1.01$). They were asked to read each of the 22 items aloud to the administrator and comment on the clarity of the directions, if any of the items were unclear, and if the items appeared to assess the domains (face validity). No amendments were made based on this feedback. We expected a factorial structure representing three dimensions of views about the future. Moreover, as suggested by Nunnally and Bernstein (1994), we expected to achieve internal consistency indices of at least .70, as this value is considered an acceptable reliability coefficient.

Method

Participants

Participants were comprised of 670 Italian adolescents, 360 (53.7 %) boys and 310 (46.3 %) girls, aged 14 to 19 years ($M = 17.31$, $SD = 1.12$). All participants were attending high school: 299 (44.6 %) attended lyceum (general school preparing for university), 218 (32.5 %) attended a technical school (technology and economy

fields), and 153 (22.8 %) were at a vocational school (industrial, services, and handicraft fields).

Instrument

The preliminary version of the 22-item VAF was used to assess items reflecting orientation toward optimism, pessimism, and hope. The instructions steered attention to the currently experienced situation: "Present days are characterized by many changes and challenges. A group of adolescents expressed the career thougths about their future listed below. Considering your actual reflections about your future career, please read each statement carefully and indicate the extent to which each of them describes you at present". A five-point scale was selected as a response format, as it is a suitable procedure with adolescents to obtain higher mean scores relative to the highest possible attainable score (Dawes, 2008). The five response options were as follows: 1 = *It does not describe me at all,* 2 = *It describes me a little*, 3 = *It describes me fairly well*, 4 = *It describes me well*, 5 = *It describes me very well*. In addition, participants were asked about their gender, age, school, and classes they were attending in a biographical data form.

Procedures

VAF was included in a survey administered to high school students who voluntarily participated and signed the consent for vocational guidance activities implemented in their high school. The instrument was administered by career counselors with a specific post-graduate training in vocational guidance and career counseling, who followed ethical procedures laid out by the Italian Society for Vocational Guidance (SIO). Administration lasted approximately 60 min. Participants were asked to read the instructions for each instrument and were informed that they would be given a confidential personalized report on their individual results once the data had been processed. Individual career counseling sessions were also available upon request. According to the national legislation of the country, this kind of research has not been submitted to institutional ethical boards. However, the research followed the ethical rules of the Italian Psychological Association and Italian Society for Vocational Guidance (SIO).

Results

Preliminary analyses

Preliminary analyses were conducted, using SPSS 23.0 to check for missing responses and to examine the distributional characteristics of the 22 items; more specifically, these included floor and ceiling effects, inter-item correlation (multicollinearity), item-total correlation, and age and gender bias (Nunnally & Bernstein, 1994). All items showed satisfactory asymmetry and kurtosis values (all values were ≤ 1) and low missing rate (<1 %). In order to preserve the number of participants originally identified, the missing value were filled with the mean for the

cases that observed the variable (Pigott, 2001). Two items showed signs of floor effect (item 20 and item 21) to which around 30 % responded with a 1. We did not remove these two items from pessimism-related items, as floor effects are common in psychological testing of negative measures (Miles & Banyard, 2007). All items of the VAF had inter-item correlations lower than .80, ranging from −.42 to .73 and indicating that the items were not similar. Moreover, item-total score correlations ranged from .42 to .74, indicating that items were not similar (i.e., that none of them were potentially redundant). Spearman's rank correlation did not show age bias ($p > .05$). T-tests showed significant gender differences for 13 items, with boys showing higher means than girls ($p < .05$); considering that observed item differences could be indicative of actual gender differences on the constructs (Morey, 2002), a third study to assess measurement invariance across gender was carried out (van de Vijver & Tanzer, 2004).

Assessing underlying structure of the scale

A principal axis factoring (PAF) analysis was conducted on the 22-item scale to estimate the number and composition of factors. The factorability was supported by Bartlett's test of sphericity, χ^2 (231, $N = 670$) = 5434.79, $p < .001$, and the Kaiser–Meyer–Olkin measure of sampling adequacy of .90 (Tabachnick & Fidell, 2001). Parallel analysis (Horn, 1965) and analysis of the scree plot (Cattell, 1966) were used to determine the number of factors to extract from the data. Specifically, parallel analysis was conducted using 1000 randomly generated samples composed of an identical number of participants and items as in the current study. Both the scree plot (Cattell, 1966) and parallel analysis tests (Horn, 1965) suggested an initial three-factor solution that was subsequently examined with an EFA with an oblique rotation (direct oblimin) because factors were expected to be correlated. To help identify a target item pool, item loadings below .40 and/or with cross-loadings on other factors exceeding .25 were deleted (Pett, Lackey, & Sullivan, 2003); consequently, three items were deleted. The final run of PAF on the three-factor oblique solution with 19 items accounted for 45.01 % of total variance. Table 1 shows the total sample factor loadings for the three-factor model, factor loadings, commonality estimates, and eigenvalues. The first factor was composed of six items, accounted for 16.62 % of the variance, and referred to as orientation toward optimism. The second factor was similarly composed of six items, accounted for 15.56 % of the variance, and concerned orientation toward pessimism. The third factor comprised seven items, accounted for 12.85 % of the variance, and referred to orientation toward hope (see Table 1).

Descriptive information

Means and standard deviations of each factor were as follows: optimism, $M = 19.56$, $SD = 4.53$; pessimism, $M = 12.97$, $SD = 4.25$; hope, $M = 23.93$, $SD = 4.57$. Floor and ceiling effects of the subscales were analyzed with SPSS, and considered to be present if more than 15 % of the respondents achieved the highest or lowest possible score in each factor. No ceiling or floor effect was evident. The

Table 1 Items, component loading, commonality estimates, matrix Δx, and indices R^2

Items	Factors			Commonality	Matrix Δx	R^2
	1	2	3			
2. Penso di essere una persona ottimista	**.85**	.02	−.04	.68	.81	.65
I think I am an optimist						
8. Mi considero una persona che pensa in modo positivo	**.85**	−.02	−.03	.70	.85	.72
I think of myself as a person who thinks positively						
5. Generalmente sono pieno/a di entusiasmo e di ottimismo verso il mio futuro	**.80**	−.01	−.04	.61	.75	.57
Usually, I am full of enthusiasm and optimism about my future						
10. Anche se incontrerò delle difficoltà in futuro continuerò ad essere ottimista	**.60**	.01	.15	.48	.70	.49
Even if I encounter difficulties in the future I will continue being optimistic						
4. Sono tanti i miei momenti di felicità	**.46**	−.12	.10	.33	.58	.33
I am often happy						
7. Mi capiteranno certamente più cose positive che negative	**.40**	.02	.25	.33	.59	.35
I am sure I will have more positive than negative experiences						
21. È inutile sperare nel futuro, io non riuscirò a fare quello che ho in mente	−.06	**.74**	.04	.56	.70	.49
It is useless to hope for the future: I will not be able to do what I have in mind						
18. Le speranze che avrò in futuro saranno poche	−.03	**.67**	−.01	.47	.72	.51
I can see little hope for my future						
17. Difficilmente troverò un lavoro veramente adatto a me	.11	**.64**	−.10	.44	.65	.42
It will be hard to find a job that really suits me						
20. In futuro smetterò di sognare e sperare	−.10	**.62**	.14	.36	.61	.37
In the future I will stop dreaming and hoping						
16. In futuro dovrò accontentarmi di ciò che riuscirò a fare	.10	**.49**	−.10	.26	.47	.22
In the future I will have to settle for what I'll be able to do						
9. Non ce la farò a realizzare ciò che mi sta effettivamente a cuore	−.10	**.43**	−.10	.28	.56	.31
I will not be able to realize what I really care about						
14. Ho la certezza che in futuro riuscirò a fare qualcosa di interessante per me	−.02	−.09	**.69**	.52	.75	.57
I am sure that in the future I will be able to do something that interests me						

Table 1 continued

Items	Factors			Commonality	Matrix Δx	R^2
	1	2	3			
12. Alla fine so che otterrò ciò che desidero	.11	−.01	**.67**	.55	.73	.54
I know I will eventually get what I wish						
13. In futuro riuscirò a fare ciò che oggi non riesco a fare	−.04	.00	**.62**	.36	.57	.33
In the future I will be able to do what I can't do today						
15. In futuro lavorerò con persone che mi stimeranno molto	.03	.03	**.60**	.36	.63	.40
In the future I will work with people that will appreciate me very much						
19. In futuro sarò impegnato/a in progetti molto importanti	.02	.00	**.56**	.33	.54	.29
In the future I will engage in very important projects						
22. So che un giorno vedrò realizzati i miei desideri	.06	−.21	**.56**	.52	.71	.50
I know I will realize my wishes one day						
11. Sento che riuscirò a cavarmela piuttosto bene	.24	.00	**.45**	.42	.65	.42
I feel that I will get along quite well						
Eigenvalues	6.44	2.29	1.47			

Bold value indicates factor loadings >.40

intercorrelations among the three factors ranged from −.30 to .59, which indicates partial overlapping, yet three distinct factors. Cronbach's alpha was used to assess internal-consistency for the three factors, with results as follows: optimism .86, pessimism .78, hope .84. Thus, each of the three factors exceeded .70, as suggested by Nunnally and Bernstein (1994).

Discussion

The preliminary analysis showed satisfactory discriminant validity for all items. Moreover, the PAF analysis identified three factors with factor loadings of >.40, labeled as orientation toward optimism, orientation toward pessimism, and orientation toward hope. The factors were moderately interrelated and showed good internal consistency. In addition, the descriptive data suggested the absence of ceiling or floor effects at the factor level, and sufficient variation in the adolescents' responses around the midpoint (Terwee et al., 2007). Thus, the initial results from study 1 suggested the adequateness of the 19 developed items, with good internal consistency (Cronbach's alpha) for capturing the constructs of hope, optimism, and pessimism in order to use this study with adolescents involved in career planning.

Study 2: confirmatory factor analysis and convergent and concurrent validity

The goals of Study 2 were: (a) to test the multidimensional structure of the VAF scale using confirmatory factor analysis, and (b) to evaluate its convergent and concurrent validity.

With respect to our first aim, using a CFA in Lisrel 8.80, we tested the factor structure of the VAF determined in the first study with an independent sample. As suggested by Bollen and Long (1993), we used a competing model strategy and compared the hypothesized three-factor correlated model (Model A) with other competing factor models: *independence model* (a three-factor orthogonal model assuming non-correlated three factors; Model B); *unidimensional model* (a one-factor model having all 19-items loading on a single competing factor; Model C); and *second-order-factor model* (having the three-first-order factors subordinated to a single, second-order factor; Model D). This latter model (Model D) was also expected because of common variance shared by the three first-order factors, and because hope, optimism, and pessimism can be considered as the three dimensions of an overarching construct that is vision about the future. For the assessment of the model fit, we used (1) the χ^2-statistic; (2) the comparative fit index (CFI), and the non-normed fit index (NNFI). These indexes range from 0 to 1, with larger values indicating a better fit; (4) the root mean square error of approximation (RMSEA), where a value of 0.08 or less indicates a good model fit; and (5) the standardized root mean square residual (SRMS), where a value of 0.10 or less indicates a good model fit. The Akaike information criterion (AIC) and consistent AIC (CAIC) were also used for model comparisons, with smaller values indicating a better fit (Hu & Bentler, 1999; Kline, 2011).

Our second goal was to examine the convergent and concurrent validity of the instrument. Convergent validity was assessed by correlating the VAF scale with self-report measures of hope, optimism, and pessimism, specifically, the Adult Hope Scale (AHS; Snyder et al., 1991) and Life Orientation Test-Revised (LOT-R; Scheier et al., 1994). Concurrent validity was assessed by investigating the VAF scale relations with established measures of career adaptability and life satisfaction. Significant and positive correlations between hope and optimism, and respectively, life satisfaction and career adaptability were expected because these VAF factors are related to subjective well-being and with the propensity to suitably deal with developmental tasks and, in particular, with concern about the future (i.e., being positively future-oriented and feeling concerned about it). Negative correlations between pessimism and life satisfaction and career adaptability were expected instead (Wilkins et al., 2014).

Method

Participants

The sample comprised 675 Italian high school students, aged 14–19 years ($M_{age} = 17.15$, $SD = 1.08$), for a total of 340 (50.4 %) boys and 335 (49.6 %)

girls. Among the participants, 294 students (43.6 %) were attending lyceum, 292 (43.3 %) were at a technical school, and 89 (13.2 %) attended a vocational school.

Instruments

To assess hope, optimism, pessimism, life satisfaction, and career adaptability, the Italian adaptation of the instruments described below was used.

The Adult Hope Scale (AHS; Snyder et al., 1991). The scale was used to assess dispositional hope. It comprises 12 items, four of which are filler items. According to Snyder's cognitive model of hope, it includes two subscales, each composed by four items: (a) Agency (e.g., "I energetically pursue my goals") and (b) Pathways (e.g., "I can think of many ways to get the things in life that are important to me"). Using a 4-point Likert scale ranging from 1 (*definitely false*) to 4 (*definitely true*), participants rate the extent to which each item is true for them. Cronbach's alpha values of the scale, validated by the original authors, were .70 and .77 for the two subscales, and .82 for the total score (Snyder et al., 1991). Ferrari, Nota, and Soresi (2010) reported good psychometric properties with Italian adolescents, showing that hope correlated with career decidedness, affective evaluation of the future (optimism), and time perspective, and obtained a Cronbach's alpha of .74 for the total score and a test–retest reliability coefficient of .65 after a 1-month interval. For this study, Cronbach's alpha values were .66 and .62 for the two subscales and .74 for the total score.

Life Orientation Test-Revised (LOT-R; Scheier et al., 1994). The instrument was used to analyze dispositional optimism and pessimism. It comprises 10 items, two of which are filler items, and measures assessing expectancies for positive (four items, e.g., "In uncertain times, I usually expect the best") versus negative (four items, e.g., "If something can go wrong for me, it will") outcomes. Respondents indicated the extent to which they agreed with each item using a 5-point scale from 0 (*strongly disagree*) to 4 (*strongly agree*). Cronbach's alpha values of the scale were .78 and .68 for the two subscales (Scheier et al., 1994). In an Italian study with adolescents, Ginevra (2013) showed good psychometric requisites with Cronbach's alpha values of .68 and .70 for the subscales. These subscales correlated positively with time perspective, resilience, and hope. For this study, Cronbach's alpha values were respectively .60 and .69.

The Satisfaction with Life Scale (SLS; Diener, Emmons, Larsen, & Griffin, 1985). It is a five-item scale used to assess global life satisfaction. An example of one of the items is "I am satisfied with my life". Cronbach's alpha of the scale validated by the original authors was .87. In a study carried out to adapt and validate the Italian version of the scale, Nota, Santilli, and Soresi (2016) observed a unifactorial structure, accounting for 55.73 % of the total variance and a Cronbach's alpha of .80. In addition, the scale correlated with optimism, concern, curiosity, control, and confidence. In this study, Cronbach's alpha was .75.

Career Adapt-Abilities Scale-Italian Form (CAAS-Italy; Soresi, Nota, & Ferrari, 2012). This form consists of 24 items, translated from the Career Adapt-Abilities Scale-International Form 2.0 (Savickas & Porfeli, 2012). Participants responded to each item on a scale from 1 (*not strong*) to 5 (*strongest*). The scale assesses career

adaptability, and is divided into four subscales that measure the adapt-ability resources of concern (six items; e.g., "Realizing that today's choices shape my future"), control (six items; e.g., "Counting on myself"), curiosity (six items; e.g., "Investigating options before making a choice"), and confidence (six items; e.g., "Working up to my ability"). Cronbach's alpha values of the CAAS-Italy validated with Italian adolescents by Soresi et al. (2012) ranged from .74 to .85. For this study, Cronbach's alpha values for the four subscales were .80, .70, .73, and .80, respectively.

Procedure

The same procedure used in the first study was followed by study 2.

Results

Confirmatory factor analysis

Before running CFA with all 19 items, univariate and multivariate distribution indices were examined. As data deviated from normal distribution, a robust, maximum likelihood estimate was used. Moreover, the Satorra–Bentler scaled χ^2 test statistic was used for assessing the overall model fit.

The three-factor correlated model (Model A) showed good fit: SB-χ^2 (149, $n = 675$) = 395.350; $p < .001$; CFI = .98; NNFI = .98; RMSEA = .05 (CI_{90} = .04–.06); SRMR = .05. All of the factor loadings were significant (ranging from .47 to .85), suggesting that the three factors were well represented by the items. Moreover, no large modification indices for lambda *x* were observed, suggesting that no items cross-loaded across factors. See Table 1 for R^2 for each item. Model B (three-factor orthogonal model) had the following fit: SB-χ^2 (152, $n = 675$) = 694.774; $p < .001$; CFI = .95; NNFI = .95; RMSEA = .07 (CI_{90} = .07–.08); SRMR = .20. Model C (unidimensional model) had the following fit: SB-χ^2 (152, $n = 675$) = 1971.343; $p < .001$; CFI = .86; NNFI = .84; RMSEA = .13 (CI_{90} = .12–.14); SRMR = 1.00. As Brown (2013) pointed, the second-order-factor model (Model D) produced the same goodness-of-fit as the Model A, in which the three factors are allowed to freely covary. In addition, the three first-order factors saturated significantly on the second-order factor (loadings of first-order factors were .60, −.34, and .71, respectively, for optimism, pessimism, and hope). This means that although adequate fit of such models would suggest that the second-order-factor model was consistent with the data, a three-factor correlated model would be equally consistent with the data (Hoyle, 2008). Overall, the SB χ^2 goodness of fit test for the Model A or Model D was better than all other competing models, and the three-factor correlated model or second-order model was better than independence and unidimensional models (Model B and C). The fit indices (CFI = .98, NNFI = .98 and the RMSEA = .05) and the information criteria (AIC = 477.350 and CAIC = 703.454) confirmed that the Model A or Model D fit the data used in the present study better than the competing models.

Table 2 Correlations among VAF, LOT-R, AHS, SLS, and CAAS

VAF	AHS			LOT-R		Life Satisfaction	CAAS			
	Pathway	Agency	Hope total score	Optimism	Optimism		Concern	Control	Curiosity	Confidence
Optimism	.50***	.40***	.53***	.66***	−.43***	.51***	.26***	.32***	.27***	.40***
Pessimism	−.38***	−.29***	−.38***	−.23***	.44***	−.26***	−.18***	−.21***	−.13***	−.17***
Hope	.57***	.43***	.59***	.47***	−.24***	.39***	.40***	.41***	.35***	.47***
VAF total score	.44***	.35***	.46***	.56***	−.17***	.41***	.31***	.33***	.31***	.44***

*** $p < .001$

Convergent validity

Table 2 shows the correlations among the VAF, AHS, and LOT-R. Results indicated moderate correlations between the optimism factor of the VAF and AHS total score ($r = .53$) and the pessimism subscale of the LOT-R ($r = -.43$), and moderate correlation with the optimism subscale of the LOT-R ($r = .66$). Weak to moderate correlations were observed between the pessimism factor of the VAF and AHS and the two subscales of the LOT-R (*r*s ranged in magnitude from −.23 to .44). In addition, the hope factor of the VAF showed weak to moderate correlations with subscales of the LOT-R (respectively, $r = .47$ with optimism and −.24 with pessimism) and moderate correlations ($r = .57$) with AHS total score. Lastly, the VAF total score (the items of the pessimism factor were reversed) showed weak to moderate correlations with the subscales of the AHS and LOT-R.

Concurrent validity

As expected, the factors of optimism and hope of the VAF correlated weakly to moderately positively with life satisfaction (SWLS) and career adaptability (CAAS; *r*s ranged in magnitude from .26 to .51), and the factor of pessimism of the VAF correlated weakly and negatively with quality of life and career adaptability (*r*s ranged in magnitude from −.13 to −.26). Lastly, the VAF total score correlated moderately with life satisfaction (SWLS) and career adaptability. The correlation matrix appears in Table 2.

Discussion

Study 2 was conducted to examine the stability of the 19-item factorial structure of the VAF. The confirmatory factor analysis showed that the three-factor structure yielded in study 1 was stable in a second sample of Italian adolescents. The three-factor correlated model and the second-order-factor model (having the three-first-order factors subordinated to a single, second-order factor) produced the same adequate fit indices, suggesting that the three factors were well represented by the items and that they also could be considered as indicators of a single global dimension reflecting a positively oriented vision about the future (pessimism negatively saturated the second-order factor; Bryant & Cvengros, 2004; Sun & Shek, 2012).

As far as convergent and concurrent validity are concerned, the correlation patterns were in line with our predictions, as different measures of optimism, pessimism, and hope were more correlated to the factors of optimism, pessimism, and hope, respectively, indicating that the VAF measures similar content to existing scales. Correlation of the VAF with other domains of existing measures indicate predicted, yet weaker associations, which is expected when assessing related yet dissimilar factors (discriminant validity).

Regarding concurrent validity, correlations between VAF, life satisfaction, and career adaptability ranged from −.13 to .51. The correlation matrix also shows that, as expected, higher hope and optimism and lower pessimism were associated with

higher levels of life satisfaction and career adaptability. These results, along the same lines of Chang (2001), Gilman et al. (2006), and Rottinghaus et al. (2005), suggest that optimism, pessimism, and hope are related to health and work constructs. Being characterized by higher levels of optimism, hope, and lower levels of pessimism can favor a more positive perception of personal life, thanks to a higher ability to face difficult life events, and a lower vulnerability in troubled situations. Furthermore, adolescents with higher levels of optimism and hope and lower pessimism characterize themselves also as having higher levels of career adaptability; they tend to be more capable of actively constructing their career life, coping with developmental tasks, participating in working life, and adapting to unexpected needs related to changes in the labor market and in job conditions (Savickas & Porfeli, 2012).

Study 3: examining measurement invariance across gender

A third study was conducted to analyze VAF across-gender measurement invariance. Establishing measurement invariance is a prerequisite for an instrument in order to verify item bias, i.e., if items have a different psychological meaning across groups (van de Vijver & Tanzer, 2004). Specifically, obtaining gender invariance is particularly relevant in examining gender differences in hope, optimism, and pessimism. In addition, measurement invariance allows us to investigate if gender differences obtained may be due to either items bias or true gender differences (Little, 1997).

Little (1997) distinguished two types of invariance: Category 1 invariance regards the psychometric properties of the measurement scales, and involves configural invariance, metric invariance, and scalar invariance. Category 2 invariance regards between-group differences in latent means, variances, and covariances (Cheung & Rensvold, 2002). A multiple-group confirmatory factor analysis (MGCFA using Lisrel 8.80; Jöreskog & Sörbom, 2006) with a third sample of high school students was carried out. Regarding category 1, we tested the following: (a) configural factorial invariance, that if boys and girls conceptualize the VAF scale in the same way, it suggests that at least the general factor structure is similar, but not necessarily equivalent, across groups; (b) metric factorial invariance, the notiont that when all factor loading parameters are constrained to be equal across groups, it suggests that the same unit of measurement is being used for the items across groups; and (c) scalar factorial invariance, which imposes that the vectors of item intercepts are also invariant—a prerequisite for the comparison of latent means, because it implies that the measurement scales are operationally defined in the same way among boys and girls (Cheung & Rensvold, 2002).

After ascertaining factorial invariance, we tested construct-level invariance (Category 2). Specifically, we examined the homogeneity of the variances and covariances in order to verify if the entire covariance structure is invariant across groups and has the same parametric structure, and the equivalence of the latent construct means to verify if means of factors are significantly different across groups (Little, 1997). With respect to latent-means differences and in line with

Table 3 Fit indices for the nested sequence in the multiple factor analysis and latent mean-level differences

Model	χ^2	*df*	*p*	$\Delta\chi^2$	Δdf	*p*	RMSEA	RMSEA 90 % CI	CFI	NNFI	Latent mean: Boys	Latent mean: Girls
Configural invariance[a]	638.41	298	<.001	–	–	–	.065	.057–.072	.958	.95	–	–
Weak invariance[a]	656.97	314	<.001	–	–	–	.064	.056–.071	.958	.95	–	–
Strong invariance[a]	714.85	330	<.001	–	–	–	.066	.059–.073	.953	.95	–	–
Homogeneity of variance/covariance[b]	734.87	336	<.001	20.02	6	.003	.066	.059–.074	.951	.95	–	–
Homogeneity of covariance[b]	721.37	333	<.001	6.52	3	.089	.066	.059–.073	.952	.95	–	–
Latent mean invariance[b]	755.07	333	<.001	40.22	3	.001	.069	.063–.076	.948	.95	–	–
Latent mean invariance: Optimism[b]	721.25	331	<.001	6.40	1	.011	.067	.060–.074	.952	.95	3.44	3.27
Latent mean invariance: Pesssimism[b]	739.99	331	<001	25.14	1	.000	.068	.061–.075	.950	.95	1.89	1.62
Latent mean invariance: Hope[b]	715.03	331	<.001	.18	1	.67	.066	.059–.073	.953	.95	3.76	3.73

Each nested model contains its constraints, plus the constraints of all previous, tenable models

[a] Evaluated with the RMSEA model test

[b] Evaluated with χ^2 difference test

McCulloch (2006), we expected to observe across-gender invariance, that is, no boy-girl differences on the three dimensions.

Method

Participants and procedure

The total sample was composed of 500 Italian high school students matched for gender, aged 14 to 19 years ($M = 17.65$, $SD = 1.60$). Participants were attending high schools; 251 (50.2 %) attended lyceum, 112 (22.4 %) went to a technical school, and 137 (27.4 %) attended a vocational school. Students were involved using the same procedure adopted in study 1.

Instrument

Study 3 used a 19-item VAF.

Results

Measurement invariance

The configural factorial invariance revealed a good fit χ^2 (298, $N = 500$) = 638.41; $p < .001$; CFI = .958; NNFI = .95; RMSEA = .06 (CI_{90} = .06–.07). We then tested measurement invariance, equating the loadings and the intercepts of the items. As shown in Table 3, no significant fit changes based on the RMSEA Model Test emerged (the RMSEA value of the nested model fell within the 90 % RMSEA confidence interval of the comparison model). Using the CFIΔ test, CFI changes were less than 0.01 when cross-group constraints were imposed on the measurement model (Cheung & Rensvold, 2002). These tests showed invariance of the items when measured across the two groups. Although the variance and covariance homogeneity across the two groups were not established, the covariance homogeneity was established (see Table 3). Lastly, latent-means invariance across boys and girls was not found. Further evaluation yielded significant differences in the latent-factor means, as shown in Table 3. More specifically, boys showed higher levels of optimism and pessimism.

Discussion

The aim of this study was to analyze the VAF's across-gender measurement invariance. Results confirmed configural, metric, and scalar invariance across genders, indicating that no item contained gender bias and that the VAF is measuring the same latent dimensions in boys and girls, such that its structure appears to be the same across gender. Moreover, this suggests that the constructs' variance, correlational, and mean-level differences could be meaningfully compared with quantitative precision because the items were defined in the same operational manner for each group (Little, 1997). More specifically, covariance homogeneity

was observed, confirming that correlations between optimism, pessimism, and hope are invariant between boys and girls. Although gender differences were observed, with boys reporting higher levels of optimism and pessimism than girls, these results reflect true differences and not a bias of the measure itself. No gender differences were observed for the concept of hope. Although our findings are in line with McCulloch's (2006) results, where no differences between boys and girls on hope were observed, as shown in the literature gender role differences for optimism and pessimism were found. This confirms Boman and Yates' (2001) assertion that it is almost impossible to precisely describe gender similarities and differences in adolescents' dispositional optimism and pessimism. Higher levels of optimism and pessimism in boys seem to confirm that optimism and pessimism are two distinct constructs, which may coexist in the same individual (Benyamini, 2005). Furthermore, this difference could be associated with the fact that although boys recognize themselves as persons who think positively and expect positive results, existing conditions in the labor market, including the excessive work insecurity and the marked flexibility currently required, may have fostered their belief of being unable to reach in their future what they care about most, thus facilitating a reduction in their positive expectations for the future (Lowe & Krahan, 2000).

General discussion

The combined results of our three studies provide strong psychometric support for the VAF questionnaire. The factor analyses supported a three-factor structure, useful in evaluating orientation toward optimism, pessimism, and hope, and showed good reliability. The confirmatory factor analyses with three first-order factors and a second-order factor suggest that the instrument can be used when separately assessing each dimension and when analyzing a general sense of positive future orientation (items related to pessimism should then be recoded). Correlational analyses conducted with the LOT-R and the AHS confirm the convergent validity of the VAF questionnaire. Additionally, correlations with SLS and CAAS support the idea that optimism, pessimism, and hope are related to other theoretically inferred concepts of life satisfaction and career adaptability as important health and career constructs (Chang, 2001; Gilman et al., 2006; Rottinghaus et al., 2005). Lastly, measurement invariance assumptions held for the instrument and, therefore, the constructs measured, were the same for girls and boys. Specifically, although the three constructs are similarly perceived across gender groups, the means across these groups significantly differ on optimism and pessimism.

Limitations and directions for future studies

Limitations of the current investigation indicate several avenues for future research. First of all, in the first study the three factors accounted for 45.04 % of variance, which is lower than the recommended 60 % (Hair, Black, Babin, Anderson, & Tatham, 2006). Future studies should verify what other factors add up to having positive views about future (e.g., self-confidence, self-esteem, resilience, time

perspective). Secondly, the AHS and the LOT-R measures showed alpha levels below .70 in our sample. However, some authors (Fornell & Larcker, 1981) consider an alpha value of .60 to be at a low but acceptable level. Thirdly, the predictive validity of the VAF was not addressed. Additional research is needed to test it. Fourthly, because requests for career counseling and vocational guidance activities arise from a positive client attitude toward the possibility of successfully facing his or her professional issues and considering that participation to vocational guidance activities should be voluntary, it is possible that adolescents who participated in this research project are more oriented to optimism and hope. Future studies should generalize these findings to other adolescents. Only Italian adolescents were involved in the development of the VAF. Cross-cultural differences could be examined in future studies. Gender differences should be also investigated for each construct, together with the role that the perception of the current labor market might have on career counseling with adolescents. Finally, test–retest reliability should also be assessed in further research studies.

Conclusion

VAF is a psychometrically valid measure for collecting data on adolescents' optimism, pessimism, and hope. In terms of the practical implications, the observed instrument's goodness of psychometric requisites supports its use in counseling and in career counseling in order to examine levels of optimism, pessimism, and hope. Given the relevance that these constructs are assuming in career design (Savickas et al., 2009), finding low levels of optimism and hope and high levels of pessimism may underlie the need for specific individualized intervention. Its usefulness in verifying the efficacy of related training is also supported. It might further be used in studies aimed at examining relationships between optimism, pessimism, and hope or positive views about the future, on one side, and psychosocial and career constructs during adolescence on the other.

References

Affleck, G., & Tennen, H. (1996). Construing benefits from adversity: Adaptational significance and dispositional underpinnings. *Journal of Personality, 64*, 899–922. doi:10.1111/1467-6494.ep9706272191.

Amundson, N., Niles, S., Yoon, H. J., Smith, B., In, H., & Mills, L. (2013, March 7). *Hope centered career development for university/college students.* Retrieved from http://www.ceric.ca/ceric/files/pdf/CERIC_Hope-Centered-Career-Research-Final-Report.pdf.

Averill, J. R., Catlin, G., & Chon, K. K. (1990). *Rules of hope*. New York, NY: Springer. doi:10.1007/978-1-4613-9674-1.

Benyamini, Y. (2005). Can high optimism and high pessimism co-exist? Findings from arthritis patients coping with pain. *Personality and Individual Differences, 38*, 1463–1473. doi:10.1016/j.paid.2004.09.020.

Bollen, K. A., & Long, J. S. (1993). *Testing structural equation models*. Newbury Park, CA: Sage.

Boman, P., & Yates, G. C. (2001). Optimism, hostility, and adjustment in the first year of high school. *British Journal of Educational Psychology, 71*, 401–411. doi:10.1348/000709901158587.

Brown, S. D. (2015). Un modello sociocognitivo della speranza professionale [A social cognitive model of vocational hope]. In L. Nota & S. Soresi (Eds.), *Il counselling del futuro*. Padova, Italy: Cleup.

Brown, T. A. (2013). Latent variables measurement models. In T. D. Little (Ed.), *The Oxford handbook of quantitative methods* (pp. 257–280). Oxford, UK: Oxford University Press.

Bryant, F. B., & Cvengros, J. A. (2004). Distinguishing hope and optimism: Two sides of a coin, or two separate coins? *Journal of Social and Clinical Psychology, 23*, 273–302. doi:10.1521/jscp.23.2.273.31018.

Carver, C. S., & Scheier, M. F. (2013). Goals and emotion. In M. D. Robinson, E. R. Watkins, & E. Harmon-Jones (Eds.), *Guilford handbook of cognition and emotion* (pp. 176–194). New York, NY: Guilford Press.

Cattell, R. B. (1966). The scree test for the number of factors. *Multivariate Behavioral Research, 1*, 245–276. doi:10.1207/s15327906mbr0102_1d.

Chang, E. C. (Ed.). (2001). *Optimism and pessimism*. Washington, DC: American Psychological Association.

Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling, 9*, 233–255. doi:10.1207/S15328007SEM0902_5.

Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in scale development. *Psychological Assessment, 7*, 309–319. doi:10.1037/1040-3590.7.3.309.

Creed, P. A., Patton, W., & Bartrum, D. (2002). Multidimensional properties of the LOT-R: Effects of optimism and pessimism on career and well-being related variables in adolescents. *Journal of Career Assessment, 10*, 37–52. doi:10.1177/1069072702010001003.

Dawes, J. (2008). Do data characteristics change according to the number of scale points used? An experiment using 5-point, 7-point and 10-point scales. *International Journal of Market Research, 50*(1), 61–77.

Diener, E. D., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*, 71–75. doi:10.1207/s15327752jpa4901_13.

Doucette, A., & Bickman, L. (2001). *Child adolescent measurement system (CAMS)*. Nashville, TN: Vanderbilt University.

Ferrari, L., Nota, L., & Soresi, S. (2010). Time perspective and indecision in young and older adolescents. *British Journal of Guidance & Counselling, 38*, 61–82. doi:10.1080/03069880903408612.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*, 39–50. doi:10.2307/3151312.

Gerard, J. M., & Booth, M. Z. (2015). Family and school influences on adolescents' adjustment: The moderating role of youth hopefulness and aspirations for the future. *Journal of Adolescence, 44*, 1–16. doi:10.1016/j.adolescence.2015.06.003.

Gilman, R., Dooley, J., & Florell, D. (2006). Relative levels of hope and their relationship with academic and psychological indicators among adolescents. *Journal of Social and Clinical Psychology, 25*, 166–178. doi:10.1521/jscp.2006.25.2.166.

Ginevra, M. C. (2013, December). *Optimism and hope in adolescents*. Paper presented at Italian National Conference 'Counseling and Career Counseling', Padova, Italy.

Guichard, J. (2005). Life-long self construction. *International Journal for Educational and Vocational Guidance, 5*, 111–124. doi:10.1007/s10775-005-8789-y.

Hair, J. F., Jr., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis* (6th ed.). Upper Saddle River, NJ: Pearson-Prentice Hall.

Hartung, P. J. (2011). Barrier or benefit? Emotion in life-career design. *Journal of Career Assessment, 19*, 296–305. doi:10.1177/1069072710395536.

Herzberg, P. Y., Glaesmer, H., & Hoyer, J. (2006). Separating optimism and pessimism: A robust psychometric analysis of the revised Life Orientation Test (LOT-R). *Psychological Assessment, 18*, 433–438. doi:10.1037/1040-3590.18.4.433.

Hinds, P. S., & Martin, J. (1988). Hopefulness and the self-sustaining process in adolescents with cancer. *Nursing Research, 37*, 336–340. doi:10.1097/00006199-198811000-00005.

Horn, J. L. (1965). A rationale and test for the number of factors in factor analysis. *Psychometrika, 30*, 179–185. doi:10.1007/BF02289447.

Hoyle, R. H. (2008). Latent variables models of social research data. In P. Alasuutari, L. Bickman, & J. Brannen (Eds.), *The Sage handbook of social research methods* (pp. 395–413). London, UK: Sage.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional fit criteria versus new alternatives. *Structural Equation Modeling, 6*, 1–55. doi:10.1080/10705519909540118.

Jiang, X., Huebner, E. S., & Hills, K. J. (2013). Parent attachment and early adolescents' life satisfaction: The mediating effect of hope. *Psychology in the Schools, 50*, 340–352. doi:10.1002/pits.21680.

Jöreskog, K., & Sörbom, D. (2006). *LISREL 8.80 for Windows*. Lincolnwood, IL: Scientific Software International Inc.

Kenny, M. E., Blustein, D. L., Haase, R. F., Jackson, J., & Perry, J. C. (2006). Setting the stage: Career development and the student engagement process. *Journal of Counseling Psychology, 53*, 272–279. doi:10.1037/0022-0167.53.2.272.

Kline, R. B. (2011). *Principles and practice of structural equation modeling*. New York, NY: The Guilford Press.

Little, T. D. (1997). Mean and covariance structures (MACS) analyses of cross-cultural data: Practical and theoretical issues. *Multivariate Behavioral Research, 32*, 53–76. doi:10.1207/s15327906mbr3201_3.

Lowe, G. S., & Krahn, H. (2000). Work aspirations and attitudes in an era of labour market restructuring: A comparison of two Canadian youth cohorts. *Work, Employment & Society, 14*, 1–22. doi:10.1177/09500170022118248.

Marshall, G. N., Wortman, C. B., Kusulas, J. W., Hervig, L. K., & Vickers, R. R., Jr. (1992). Distinguishing optimism from pessimism: Relations to fundamental dimensions of mood and personality. *Journal of Personality and Social Psychology, 62*, 1067–1074. doi:10.1037/0022-3514.62.6.1067.

McCulloch, L. M. (2006, April). *The relationship among hope, optimism, and academic achievement.* Retrieved from https://circle.ubc.ca/bitstream/handle/2429/3858/mccullochthesis.pdf?sequence=1.

Miles, J., & Banyard, P. (2007). *Understanding and using statistics in psychology: A practical introduction: Or, how I came to know and love the standard error*. London, UK: Sage.

Monzani, D., Steca, P., & Greco, A. (2014). Brief report: Assessing dispositional optimism in adolescence—Factor structure and concurrent validity of the Life Orientation Test-Revised. *Journal of Adolescence, 37*, 97–101. doi:10.1016/j.adolescence.2013.11.006.

Morey, L. C. (2002). Measuring personality and psychopathology. In I. B. Weiner, J. A. Schinka, & W. F. Velicer (Eds.), *Handbook of psychology. Research methods in psychology*. Hoboken, NJ: Wiley.

Niles, S. G., Amundson, N. E., & Neault, R. A. (2011). *Career flow: A hope-centered approach to career development*. Columbus, OH: Pearson.

Nota, L., Ginevra, M. C., & Santilli, S. (2015). Life design and prevention. In L. Nota & J. Rossier (Eds.), *Handbook of life design: From practice to theory and from theory to practice* (pp. 183–199). Göttingen, Germany: Hogrefe.

Nota, L., Santilli, S., & Soresi, S. (2016). A life-design-based online career intervention for early adolescents: Description and initial analysis. *The Career Development Quarterly, 64*, 4–19. doi:10.1002/cdq.12037.

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York, NY: McGraw-Hill.

Pacico, J. C., Bastianello, M. R., Zanon, C., & Hutz, C. S. (2013). Adaptation and validation of the dispositional hope scale for adolescents. *Psicologia: Reflexão e Crítica, 26*, 488–492.

Park, N., & Peterson, C. (2006). Moral competence and character strengths among adolescents: The development and validation of the values in action inventory of strengths for youth. *Journal of Adolescence, 29*, 891–909. doi:10.1016/j.adolescence.2006.04.011.

Patton, W., Bartrum, D. A., & Creed, P. A. (2004). Gender differences for optimism, self esteem, expectations and goals in predicting career planning and exploration in adolescents. *International Journal for Educational and Vocational Guidance, 4*, 193–209. doi:10.1007/s10775-005-1745-z.

Pett, M. A., Lackey, N. R., & Sullivan, J. J. (2003). *Making sense of factor analysis: The use of factor analysis for instrument development in health care research*. Thousand Oaks, CA: Sage.

Pigott, T. D. (2001). A review of methods for missing data. *Educational Research and Evaluation, 7*, 353–383. doi:10.1076/edre.7.4.353.8937.

Rottinghaus, P. J., Day, S. X., & Borgen, F. H. (2005). The career futures inventory: A measure of career-related adaptability and optimism. *Journal of Career Assessment, 13*, 3–24. doi:10.1177/1069072704270271.

Savickas, M. L. (2013). Career construction theory and practice. In R. W. Lent & S. D. Brown (Eds.), *Career development and counseling: Putting theory and research to work* (2nd ed., pp. 144–180). Hoboken, NJ: Wiley.

Savickas, M. L., Nota, L., Rossier, J., Dauwalder, J. P., Duarte, M. E., Guichard, J., … Van Vianen, A. E. (2009). Life designing: A paradigm for career construction in the 21st century. *Journal of Vocational Behavior*, *75*, 239–250. doi:10.1016/j.jvb.2009.04.004

Savickas, M. L., & Porfeli, E. J. (2012). Career adapt-abilities scale: Construction, reliability, and measurement equivalence across 13 countries. *Journal of Vocational Behavior, 80*, 661–673. doi:10.1016/j.jvb.2014.02.011.

Scheier, M. F., & Carver, C. S. (1985). Optimism, coping, and health: Assessment and implications of generalized outcome expectancies. *Health Psychology, 4*, 219–247. doi:10.1037/0278-6133.4.3.219.

Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A reevaluation of the Life Orientation Test. *Journal of Personality and Social Psychology, 67*, 1063–1078. doi:10.1037/0022-3514.67.6.1063.

Schmid, K. L., Phelps, E., & Lerner, R. M. (2011). Constructing positive futures: Modeling the relationship between adolescents' hopeful future expectations and intentional self regulation in predicting positive youth development. *Journal of Adolescence, 34*, 1127–1135. doi:10.1016/j.adolescence.2011.07.009.

Scioli, A., Chamberlin, C. M., Samor, C. M., Lapointe, A. B., Campbell, T. L., Macleod, A. R., & McLenon, J. (1997). A prospective study of hope, optimism, and health. *Psychological Reports, 81*, 723–733. doi:10.2466/pr0.1997.81.3.723.

Scioli, A., Ricci, M., Nyugen, T., & Scioli, E. R. (2011). Hope: Its nature and measurement. *Psychology of Religion and Spirituality, 3*, 78–97. doi:10.1037/a0020903.

Segerstrom, S. C., Evans, D. R., & Eisenlohr-Moul, T. A. (2011). Optimism and pessimism dimensions in the Life Orientation Test-Revised: Method and meaning. *Journal of Research in Personality, 45*, 126–129. doi:10.1016/j.jrp.2010.11.007.

Snyder, C. R. (Ed.). (2000). *Handbook of hope: Theory, measures, and applications*. San Diego, CA: Academic Press.

Snyder, C. R., Harris, C., Anderson, J. R., Holleran, S. A., Irving, L. M., Sigmon, S. T., … Harney, P. (1991). The will and the ways: Development and validation of an individual-differences measure of hope. *Journal of Personality and Social Psychology*, *60*, 570–585. doi:10.1037/0022-3514.60.4.570

Snyder, C. R., Sympson, S. C., Ybasco, F. C., Borders, T. F., Babyak, M. A., & Higgins, R. L. (1996). Development and validation of the State Hope Scale. *Journal of Personality and Social Psychology, 70*, 321–335. doi:10.1037/0022-3514.70.2.321.

Soresi, S., Nota, L., & Ferrari, L. (2012). Career Adapt-Abilities Scale-Italian form: Psychometric properties and relationships to breadth of interests, quality of life, and perceived barriers. *Journal of Vocational Behavior, 80*, 705–711. doi:10.1016/j.jvb.2012.01.020.

Staats, S. (1989). Hope: A comparison of two self-report measures for adults. *Journal of Personality Assessment, 53*, 366–375. doi:10.1207/s15327752jpa5302_13.

Sun, R. C., & Shek, D. T. (2012). Beliefs in the future as a positive youth development construct: A conceptual review. *The Scientific World Journal, 2012*, 1–8. doi:10.1100/2012/527038.

Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate analysis*. Boston, MA: Allyn and Bacon.

Terwee, C. B., Bot, S. D., de Boer, M. R., van der Windt, D. A, Knol, D. L., Dekker, J., … de Vet, H. C. (2007). Quality criteria were proposed for measurement properties of health status questionnaires. *Journal of Clinical Epidemioly, 60*, 34–42.

van de Vijver, F., & Tanzer, N. K. (2004). Bias and equivalence in cross-cultural assessment: An overview. *European Review of Applied Psychology, 54*, 119–135. doi:10.1016/j.erap.2003.12.004.

Wilkins, K. G., Santilli, S., Ferrari, L., Nota, L., Tracey, T. J. G., & Soresi, S. (2014). The relationship among positive emotional dispositions, career adaptability, and satisfaction in Italian high school students. *Journal of Vocational Behavior, 85*, 329–338. doi:10.1016/j.jvb.2014.08.004.

Yakushko, O., & Sokolova, O. (2010). Work hope and influences of the career development among Ukrainian college students. *Journal of Career Development, 36*, 310–323. doi:10.1177/0894845309345670.