

THE FUNCTIONS OF IDENTITY SCALE: VALIDATION IN ITALIAN LATE ADOLESCENTS AND EMERGING ADULTS

ELISABETTA CROCETTI
UNIVERSITY OF MACERATA

LUIGIA SIMONA SICA
UNIVERSITY OF TORINO — UNIVERSITY OF NAPOLI “FEDERICO II”

SETH JOSEPH SCHWARTZ
UNIVERSITY OF MIAMI

TONI SERAFINI
ST. JEROME’S UNIVERSITY

WIM MEEUS
UNIVERSITY OF UTRECHT

The primary purpose of this study was to evaluate the factor structure and convergent validity of an Italian translation of the Functions of Identity Scale (FIS). Participants were 1,201 Italian late adolescents and emerging adults. Confirmatory factor analyses provided support for a five-factor solution, which was found to be consistent across gender and age groups (late adolescents and emerging adults). Convergent validity was demonstrated through theoretically consistent associations between the FIS dimensions and measures of identity commitment and sense of coherence. Overall, findings suggest that the Italian version of the FIS is a promising tool for assessing identity functions, although a revised version with three additional items could be useful to improve scale reliability.

Key words: Identity functions; Italian validation; Confirmatory factor analysis; Identity commitment; Sense of coherence.

Correspondence concerning this article should be addressed to Elisabetta Crocetti, Dipartimento di Scienze dell’Educazione e della Formazione, Università di Macerata, Piazzale Luigi Bertelli (Contrada Vallebona), 62100 Macerata (MC), Italy. E-mail: elisabetta.crocetti@unimc.it

INTRODUCTION

Identity formation is a core developmental task of adolescence (Erikson, 1950, 1968). Exploring who one is in the context of personal values, beliefs, actions, and social or group belongingness characterizes this stage. These considerations begin to emerge in early to mid- adolescence (Allison & Schultz, 2001). Biological (e.g., puberty), cognitive (e.g., acquisition of hypothetic-deductive reasoning), and social (e.g., transformations in interpersonal relationships) changes central to this period of development stimulate identity considerations and the exploration of alterna-

tives so that identity commitments may be enacted. Of course, identity processes are not limited to adolescence. Identity development is also a key developmental task of emerging adulthood, which represents the late teens and the twenties (Arnett, 2000). It is during this developmental period that young people have the freedom to explore a wide range of alternatives in education, work, love, and other significant identity domains before making enduring choices (Arnett, 2004).

Developing a stable identity is a necessary prerequisite for healthy youth development (e.g., high levels of well-being, low distress and problematic behaviors) and for being able to solve subsequent life tasks such as committed partnership and parenting (Erikson, 1950, 1968). Erikson (1968) conceptualized identity both as a conscious sense of individual uniqueness and as an unconscious striving for continuity of experience. Adolescents may move toward either of two poles: *identity achievement* and *identity confusion*. Identity-achieved individuals have combined and integrated relevant earlier identifications into a unique and personal mosaic. On the contrary, identity-confused young people have not chosen their own commitments and, thus, they move from one identification to the next (or resist identifying with anything at all).

Drawing upon Erikson's (1950, 1968) theory, Adams and Marshall (1996) proposed that, as a social-psychological construct, identity has certain properties and functions. Identity is considered to have a self-regulatory function in the development of self, and it is defined as a "*self-regulatory system* which functions to *direct* attention, *filter* or *process* information, *manage* impressions, and *select* appropriate behaviors" (p. 433, italics in original). These scholars, in line with Erikson's (1968) notion of an "optimal identity" (p. 165), proposed a model including five identity functions.

The functions of identity are presented and summarized here (for more detailed descriptions, see Serafini & Adams, 2002). First, identity provides individuals with a sense of *structure* with which to understand self-relevant information. A strong structure for self-understanding is conceptually linked with low levels of anxiety about the self. Having achieved an identity has been associated with healthy self-esteem and self-acceptance, good self-image, and lower adolescent egocentrism (for a review see Marcia, 1993; see also Meeus, Iedema, Helsen, & Vollebergh, 1999). Thus identity provides the structure needed to process and filter information in ways that are relevant to and meaningful for one's individual identity.

Second, identity provides a sense of consistency, coherence, and *harmony* between and among one's chosen values, beliefs, and commitments. Studies suggest that individuals who have achieved an identity display higher psychosocial maturity (Adams, Berzonsky, & Keating, 2006) and lower use of defense mechanisms (Cramer, 1995) than youths whose identity is less well-developed. Identity thus serves to maintain consistency and coherence among values, beliefs, and commitments.

Third, identity provides individuals with a *future* orientation regarding identity choices and possibilities. Two domains in which youth may recognize their potential are academic achievement and career planning. Individuals who are identity-achieved generally have higher academic grades (Cross & Allen, 1970), as well as a greater desire to continue their education beyond high school (Francis, 1981), compared to diffused individuals. Similarly, those who have a well-developed identity exhibit greater career planning and decidedness (Wallace-Broschius, Serafica, & Osipow, 1994) and a sense of continuity between past, present, and future (Luyckx, Lens, Smits, & Goossens, 2010). It is evident that individuals who have a well-developed sense of self are invested in future possibilities and commitments.

Fourth, identity offers *goals* and direction through commitments and values chosen by the individual. Having achieved an identity is associated with greater commitments (Adams, Shea, & Fitch, 1979) and more goal-directedness and self-motivation (Blustein & Palladino, 1991) compared to possessing a weak or poorly consolidated sense of identity. Furthermore, adolescents who have achieved a firm identity adopt more planned, rational, and logical decision-making strategies compared to their peers who have not (Blustein & Phillips, 1990; Boyes & Chandler, 1992). Thus, individuals who have achieved an identity appear to be more goal-oriented in their intentions and behaviors than individuals whose identity is less well-consolidated.

Finally, identity provides a sense of personal *control*, free will, or agency that enables active self-regulation in the process of setting and achieving goals, moving toward future plans, and processing experiences in ways that are self-relevant (Schwartz, Côté, & Arnett, 2005). This identity function was originally connected to locus of control, because youth who have achieved an identity report the least amount of external locus-of-control, and those who are identity-diffused show the greatest external locus of control (Abraham, 1983). This suggests that individuals with a stronger sense of identity have greater confidence in their own personal control over their lives. Related research (Adams, Ryan, Hoffman, Dobson, & Nielsen, 1984) demonstrated greater conformity to peer pressure among youth with poorly-established identities (Marcia, 1993), as evidenced, in part, by signs of substance abuse and greater alcohol consumption (Jones, Hartmann, Grochowski, & Glider, 1989). More recently (Serafini, 2007), the control function was expanded to include a greater focus on self-regulation, as originally theorized by Erikson (1968). Results reported by Serafini (2007) indicate that the personal control function of identity is associated with self-efficacy, which includes successful coping and implies an internal-stable attribution of success.

Building upon this theoretical conceptualization, Serafini and Adams (2002) developed the *Functions of Identity Scale* (FIS) to measure identity functions. Until now, the FIS has been only used with North American university students. The aim of the present contribution was to validate an Italian version of the FIS. Before presenting our study, we reviewed relevant information on the construction and development of the FIS, focusing on its psychometric properties and convergent validity.

THE FUNCTIONS OF IDENTITY SCALE: SCALE CONSTRUCTION AND FACTOR STRUCTURE

The FIS was developed by Serafini and Adams (2002). In their first study (Serafini & Adams, 2002, Study 1), conducted with a predominantly female sample of university undergraduates, the authors, from an initial item pool consisting of 60 items, retained 22 items. Using Exploratory Factor Analyses (EFA), Serafini and Adams found evidence for a five-factor solution, in line with the theoretical conceptualization underlying the FIS. Reliability of the five factors, measured in terms of Cronbach's alphas, was shown to be moderate to good, with values ranging from .69 (control) to .89 (structure).

In a subsequent study (Serafini & Adams, 2002, Study 2) with a small sample mainly composed of female undergraduates, the authors found support for a four-factor solution, including structure, future, control, and harmonious goals functions (i.e., the items of harmony and goals factors were collapsed into a single factor). Cronbach's alphas for these four factors were

found to be moderate to good, with values ranging from .65 (control) to .84 (structure). Differences in the factor structure between Studies 1 and 2 were attributed to the small sample size used in Study 2, and Serafini and Adams recommended further testing of the original five-factor model.

In a third study, Serafini, Maitland, and Adams (2003) assessed the construct validity of the FIS in a large sample consisting of approximately 1,580 male and female undergraduate students. Confirmatory factor analysis (CFA) provided support for a four-factor structure of the FIS, with three-item subscales for structure, harmony, goals, and future (i.e., the control factor was eliminated). Because support for the control function was not replicated, the authors suggested that future research should focus on revising this subscale.

The FIS was revised accordingly based on these previous findings, and a 15-item version was tested with a sample of more than 500 undergraduate students (Serafini, Maitland, & Adams, 2006). CFA revealed strong support for a five-factor solution as most appropriate (with a revised control factor, which Serafini et al. called personal control). The five factors (structure, harmony, goals, future, and personal control) were each measured by three items. The five-factor model was compared against a single-factor "General Identity Functions" model containing the same 15 final items. Findings indicated that the five-factor model fit the data significantly better than a one-factor model, supporting the theoretical notion of five functions of identity (Adams & Marshall, 1996). Thus, even though identity functions are significantly interrelated (Serafini, 2007; Serafini & Adams, 2002), they nonetheless appear to be somewhat distinct.

Recently, Serafini (2008) tested the structure of the FIS in a younger sample consisting of undergraduate students with ages ranging mainly between 17 and 22 years. She found good internal consistency for all factors, except for personal control ($\alpha = .54$), and acceptable test-retest reliability, although somewhat lower than expected, with values ranging from .54 (personal control) to .77 (goals).

THE FUNCTIONS OF IDENTITY SCALE: CONVERGENT VALIDITY

The convergent validity of the FIS has been documented by showing that the identity functions were meaningfully associated with theoretically-based correlates (i.e., stability of self, purpose in life, fear of negative evaluation, locus of control, and self-efficacy), and with other identity constructs (i.e., identity statuses, identity styles, and identity distress).

Identity functions and self correlates. Serafini and Adams (2002, Study 2) examined correlations between five identity functions and stability of self, purpose in life, fear of negative evaluation, and locus of control. Primary findings indicated that (a) structure was positively related to stability of self, purpose in life, and internal locus of control, and negatively related to fear of negative evaluation; (b) the harmonious goals dimension (i.e., in this study harmony and goals factors were collapsed into a single factor) was positively linked to stability of self and purpose in life, and negatively associated with fear of negative evaluation; (c) future orientation was positively related to purpose in life and internal locus of control, whereas it was negatively linked to fear of negative evaluation; and (d) control was positively associated with an internal locus of control. These findings were replicated by Serafini (2007), but in that study, harmony and goals

represented separate functions, and both were positively related to stability of self and to purpose in life. Similarly, both were negatively related to fear of negative evaluation.

Identity functions and identity statuses. Serafini and Adams (2002, Study 2) and Serafini (2007) also investigated associations between identity functions and Marcia's (1966) identity statuses: *achievement* (i.e., individuals have found their commitments after a period of active exploration); *foreclosure* (i.e., youth have enacted their commitments without much exploration of other possible alternatives); *moratorium* (i.e., individuals are still actively exploring different alternatives, but they have not yet made relevant commitments); *diffusion* (i.e., youth do not actively explore different identity alternatives and lack strong identity commitments). The main findings indicated that students in the achieved status scored highest on identity functions as compared to those in the other statuses. Because the scale is intended to measure the process associated with the achievement of an optimal identity, a significant relationship between the functions and the achieved identity statuses suggests that the construct of identity functions is conceptually valid.

Identity functions and identity styles. Serafini (2008) studied associations between the identity functions and Berzonsky's (1989) identity styles, which represent different socio-cognitive strategies that individuals can adopt to develop their identity. Berzonsky designated three distinct styles: *informational* (i.e., self-reflective and actively seeking out and evaluating self-relevant information); *normative* (i.e., adopting prescriptions and values of significant others and conforming to their expectations); and *diffuse-avoidant* (i.e., procrastinating and delaying dealing with identity issues for as long as possible). Findings indicated that both informational and normative styles were positively associated with all five identity functions (i.e., structure, harmony, goals, future, and personal control), whereas the diffuse-avoidant style was negatively related to all five functions.

Identity functions and identity distress. Serafini (2008) also examined links between identity functions and identity distress, where identity distress is defined as discomfort associated with unresolved identity issues (Berman, Montgomery, & Kurtines, 2004). As expected, she found that all five identity functions (i.e., structure, harmony, goals, future, and personal control) were negatively related to identity distress — suggesting that resolving identity in any of its forms helps to alleviate identity confusion.

THE PRESENT STUDY

The overall purpose of the present study was to validate an Italian version of the FIS. To that end, we first examined reliabilities of the five subscales of the FIS proposed by Serafini and colleagues (Serafini & Adams, 2002; Serafini et al., 2006). Second, we tested, using Confirmatory Factor Analysis (CFA), whether the five-factor structure of the FIS, proposed by Serafini and Adams (2002), was also appropriate for the Italian version.

Third, after having found the best fitting solution in the overall Italian sample, we tested whether this solution was consistent across gender and age groups (late adolescents vs. emerging adults). Although Serafini et al. (2003) examined invariance of the English-language version across gender, they did not test for age differences. In our invariance tests, we examined measurement equivalence which is a necessary prerequisite for assuming that the same phenomena are measured across contexts (Cheung & Rensvold, 2002). In testing measurement invariance, we

followed a three-step approach: first, we tested for invariance of factor loadings; second, for invariance of correlations among factors; and third, for invariance of error variances (cf. Vandenberg & Lance, 2000).

Fourth, we tested for significant differences on the observed mean FIS scores by gender, age, or the interaction between gender and age. To date, two studies (Serafini, 2008; Serafini et al., 2003) have consistently shown no mean differences on identity functions by gender, however tests for age differences have not yet been conducted.

Fifth, we examined the convergent validity of the FIS by analyzing associations of FIS dimensions with identity commitment and sense of coherence. Identity commitment refers to the extent to which individuals have enacted relevant choices in significant life domains such as school, religion, politics, and values (Berzonsky, 2003). A focus on commitments is not new to identity theory; Marcia (1966) incorporated this dimension of Erikson's theory into his Identity Status Paradigm. In Marcia's model, an achieved identity is one characterized by having made commitments to various beliefs, values, goals, and the like. It is therefore expected that, if the FIS is indeed measuring the outcome of having achieved an "optimal identity" (Erikson, 1968, p. 165), individuals who endorse the identity functions strongly will also have made firm identity commitments.

Sense of coherence can be defined as a feeling of confidence and wholeness, as well as knowing that one possesses the resources necessary to meet life challenges as they present themselves (Antonovsky, 1987). Sense of coherence has been shown to be an important factor influencing well-being and health (Eriksson & Lindstrom, 2005). Furthermore, four of the Eriksonian developmental stages (trust/mistrust, autonomy/shame, identity/identity confusion, and intimacy/isolation) have been found to be significantly related to sense of coherence (Rennemark & Hagberg, 1997). Because sense of coherence implies a feeling of confidence with one's self-definition and is concerned with a sense of wholeness, the identity functions, as measured by the FIS, are expected to be positively associated with sense of coherence. In fact, Luyckx, Schwartz, Goossens, and Pollock (2008) have already established a relationship between sense of coherence (Antonovsky, 1987) and identity commitment (Berzonsky, 2003).

METHOD

Participants

Participants were 1,201 Italian youth (457 males and 744 females), aged from 17 to 29 years ($M_{\text{age}} = 19.65$ years, $SD = 1.66$). Two age groups were represented in the sample: a late adolescent group (age range 17-19) and an emerging adult group (age range 19-29).¹

The late adolescent group consisted of 389 students (152 males and 237 females) attending the last year of various secondary schools ($M_{\text{age}} = 18.30$ years, $SD = 0.64$). Specifically, 113 (29%) were attending a lyceum (i.e., high-level secondary schools that prepare students for university studies); 103 (26.5%) were attending a technical school; and 173 (44.5%) were attending a vocational school.

The emerging adult sample included 812 students (305 males and 507 females) attending four Italian universities (three small universities in central Italy and one large university in south-

ern Italy). Students were attending the first ($n = 430$) or the second ($n = 382$) year of university. Their ages ranged from 19 to 29 years ($M_{\text{age}} = 20.30$, $SD = 1.61$), with 94.7% of the sample ($n = 769$) ranging from 19 to 22 years. University students were enrolled in various disciplines of study: Law ($n = 270$; 33.3%), Psychology ($n = 158$; 19.5%), Sociology ($n = 121$; 14.9%), Educational Sciences ($n = 67$; 8.3%), Architecture ($n = 47$; 5.8%), Economy ($n = 39$; 4.8%), Communication Sciences ($n = 38$; 4.7%), Philosophy ($n = 35$; 4.3%), Political Sciences ($n = 30$; 3.7%), and Languages ($n = 7$; 0.9%).

Procedure

Before beginning the study, we contacted the principals of the high schools and the deans of the university departments to obtain permission to administer questionnaires. For late adolescents younger than 18, parental consent was obtained. Students were contacted at school or university by a researcher. They were provided written information about the research and asked whether they wished to participate. Approximately 99% of the approached students chose to participate. They completed the study measures in the form of an anonymous self-report questionnaire.

Measures

Functions of identity. We employed a shortened version of the FIS (Serafini et al., 2006), including 15 items. The measure was translated from English to Italian by two bilingual psychologists who are experts in identity. The two Italian versions were then compared, with the two translators discussing and resolving discrepancies between them. The translated items were then reviewed by the developer of the FIS (Toni Serafini). Because Serafini has a solid working knowledge of both the English and Italian languages, she was able to provide expert judgment on the nuances of the translation, with a focus on preserving construct validity across translations. Revisions were made based on her feedback, and a 15-item Italian version of the FIS was finalized (both the Italian and English versions are provided in the Appendix). Respondents were asked to indicate on a 5-point Likert scale how well each of the FIS statements described them (1 = *completely untrue*, 2 = *untrue*, 3 = *sometimes true/ sometimes not*, 4 = *true*, and 5 = *completely true*). Sample items are: "I am certain that I know myself" (structure); "I have constructed my own personal goals for myself" (goals); "My values and beliefs reflect who I am" (harmony); "When what I'm doing isn't working, I am able to find different approaches to meeting my goal(s)" (personal control); and "I have a good idea of what my future holds for me" (future).

Identity commitment. The Italian version (Crocetti, Rubini, Berzonsky, & Meeus, 2009) of the revised *Identity Style Inventory* (ISI-3; Berzonsky, 1992) was used. This measure includes a 10-items subscale to measure identity commitment. A sample item is: "I know what I want to do in the future." Possible responses ranged from 1 (*not at all like me*) to 5 (*very much like me*). Cronbach's alpha was .67.

Sense of coherence. The Italian version (Barni & Tagliabue, 2005) of the *Sense of Coherence Scale* (SOC; Antonovsky, 1987) was used. This consists of 13 items. A sample item is: "Do

you have the feeling that you don't really care about what goes on around you?" (reverse scored). All items were answered on a 7-point Likert scale, in which the anchors for the response scale changed to match the content of each question. For instance, for the sample item we reported, the response scale ranged from 1 (*very seldom or never*) to 7 (*very often*). Cronbach's alpha was .65 in the present sample.

RESULTS

Reliability Analyses for the FIS

Using the present dataset (collapsing across age groups), Cronbach's alphas were found to be .54 for structure, .63 for harmony, .61 for goals, .67 for future, and .50 for personal control. The low Cronbach's alphas may be due to the fact that only three items are used to assess each identity function (Springer, Abell, & Nugent, 2002; Tabachnick & Fidell, 1996). Therefore, we used the Spearman-Brown prophecy formula (Allen & Yen, 1979; Brown, 1910; Spearman, 1910), to predict what the reliability of the identity functions subscales would have been if they had consisted of more items. According to this formula, predicted reliability, $\rho_{xx'}^*$, is estimated as:

$$\rho_{xx'}^* = \frac{N\rho_{xx'}}{1 + (N-1)\rho_{xx'}}$$

where N is the number of items included in the subscale and $\rho_{xx'}$ is the reliability of the current version of the subscale. The formula predicts the reliability of a new subscale composed by replicating the current number of items N times. The formula can also be rearranged to predict the number of replications required to achieve a certain degree of reliability:

$$N = \frac{\rho_{xx'}^*(1 - \rho_{xx'})}{\rho_{xx'}(1 - \rho_{xx'}^*)}$$

By applying the Spearman-Brown prophecy formula we found that adding one item to the structure subscale would increase its alpha coefficient from .54 to .61. Moreover, adding one item to the personal control subscale would increase its alpha coefficient from .50 to .57, and by adding two items, the alpha would increase to .63. Therefore, by adding three additional items (i.e., 1 for structure and 2 for personal control) to the current 15-item version of the FIS, all five subscales would be associated with sufficient Cronbach's alpha values.

Confirmatory Factor Analysis

The second purpose of this study was to examine the factor structure of the Italian translation of the FIS. Confirmatory factor analyses (CFA), using the AMOS structural equation modeling program (Arbuckle, 2003), were performed on the 15 items. Preliminary analyses indicated that our data met assumptions of normality (i.e., all FIS items reported values of both *skewness* and *kurtosis* were between -1 and +1). As a result, we used the maximum likelihood estimator. Model fit was examined first with the overall sample. Various indices were used to evaluate

model fit (Kline, 2006): the Standardized Root Mean Square Residual (SRMR) should be equal or less than .05 (Byrne, 2009); the Goodness of Fit Index (GFI) and the Comparative Fit Index (CFI) should be equal or exceed .95 (Hu & Bentler, 1999), with values higher than .90 considered to be acceptable (Bentler, 1990); and the Root Mean Square Error of Approximation (RMSEA) should be equal or less than .08 (Browne & Cudeck, 1993). The CFI and the GFI evaluate the fit of the specified model relative to a null model with no paths or latent variables; and the RMSEA and the SRMR evaluate the extent to which the covariance structure implied by the model deviates from the covariance structure observed in the data.

We first tested a one-factor model. The fit of this model was found to be unacceptable (see Table 1), confirming that the FIS has a multidimensional structure, as documented by Serafini et al. (2006). Thus, we tested a five-factor model. Fit indices for this model were good, except that the CFI was found to be lower than .90. Modification indices suggested that correlations between three pairs of error terms would improve the fit of the model. Measurement error covariances may be due to different factors specific either to the items or to the respondents (Aish & Jöreskog, 1990). For instance, if these parameters are related to item characteristics, they might represent omitted or unmeasured latent factors. Alternatively, if they are due to respondent characteristics, they may reflect biases such as yea-saying or nay-saying, social desirability, etc. (Aish & Jöreskog, 1990). A further reason for error covariances is a high degree of overlap in item content. This situation occurs when multiple items are worded similarly and assess the same or similar constructs (Byrne, 2009). The latter explanation is most likely the case in our findings. In fact, modification indices suggested the need for correlating error terms for items 4 and 9 (“I have a good idea of what my future holds for me” and “I am clear about who I will be in the future”); 7 and 8 (“My values and beliefs are consistent with the commitments that I make in my life at this time” and “I tend to set goals and then work towards making them happen”); and 13 and 14 (“I am a goal-directed person” and “Thinking about my future gives me a sense of direction”). All of these pairs of items are worded similarly, which can create a residual correlation (Kline, 2006; Thompson, 2004). Allowing these errors to be correlated significantly improved the fit of the model, $\Delta\chi^2(3) = 158.55, p < .001$, and the revised model was found to be adequate (see Table 1).

We thus retained a five-factor model with three error correlations. Figure 1 displays the final five-factor standardized solution for the FIS in the Italian sample. FIS dimensions were found to be significantly interrelated (see Figure 1).

TABLE 1
 Fit indices of the CFAs conducted on the Italian version of the FIS

	SRMR	GFI	CFI	RMSEA (confidence interval)
One-factor model	.06	.89	.77	.09 (.09 – .10)
Five-factor model (no errors correlated)	.05	.94	.87	.07 (.07 – .08)
Five-factor model (three error correlations allowed)	.04	.95	.91	.06 (.06 – .07)

Note. $N = 1201$; SRMR = Standardized Root Mean Square Residual; GFI = Goodness of Fit Index; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation.

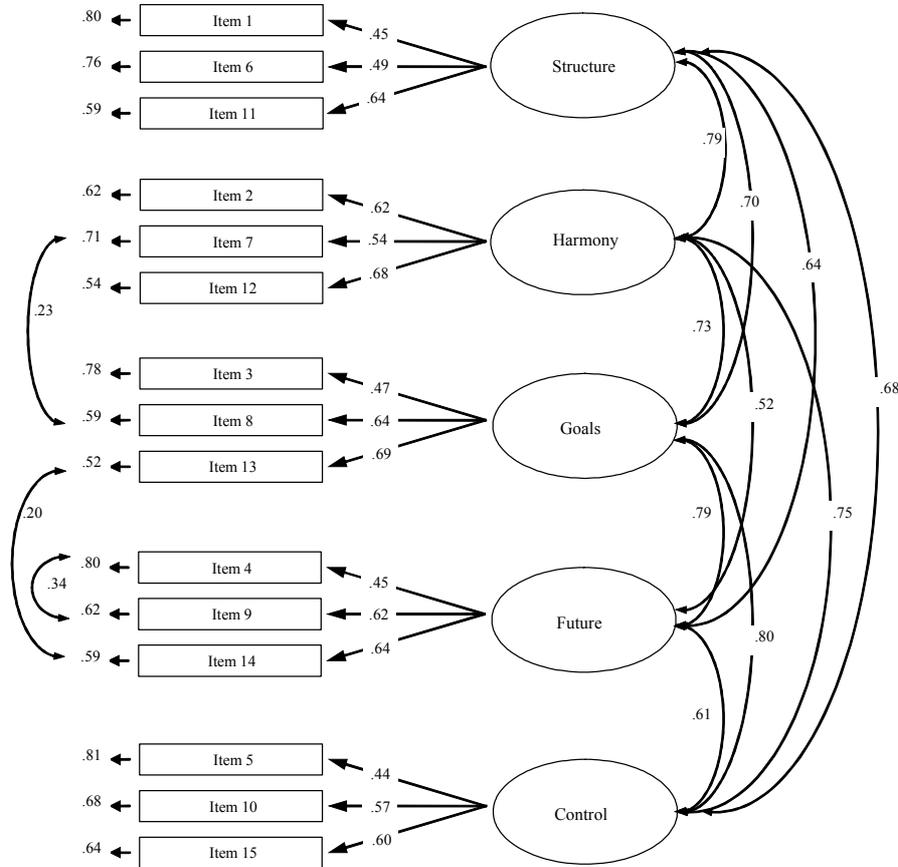


FIGURE 1
Standardized solution of the five-factor model of the FIS.
All factor-loadings and correlations are significant at $p < .001$.

Measurement Invariance across Gender and Age Groups

To test whether FIS factor structure was equivalent across gender and age groups, we performed multi-group invariance analyses on the final five-factor model we retained. In order to ascertain significant differences between the models we compared, at least two out of the following three criteria had to be satisfied: $\Delta\chi^2$ significant at $p < .05$ (Byrne, 2009); $\Delta CFI > .01$ (Cheung & Rensvold, 2002); and $\Delta TLI > .02$ (Vandenberg & Lance, 2000).

First, we tested invariance of factor loadings. Specifically, for each grouping variable (gender and age group), we estimated two multi-group structural equation models: (a) an unconstrained model where all factor loadings were free to vary across groups; and (b) a constrained model where each factor loading was set equal across groups. Model comparisons indicated that factor loadings were equivalent across both gender, $\Delta\chi^2(10) = 16.75, p = .08, \Delta CFI = .00, \Delta TLI = .00$, and age groups, $\Delta\chi^2(10) = 13.92, p = .18, \Delta CFI = .00, \Delta TLI = .00$.

Second, after having established invariance of factor loadings, we tested for invariance of inter-factor correlations. Thus, for both gender and age groups, two models were compared (in

both models factor loadings were fixed across groups): (a) an unconstrained model where all inter-factor correlations were free to vary across groups; and (b) a constrained model where each inter-factor correlation was set equal across groups. Again, model comparisons revealed that the correlations between FIS factors were equivalent across both gender, $\Delta\chi^2(10) = 17.98, p = .06, \Delta CFI = .00, \Delta TLI = .00$, and age groups, $\Delta\chi^2(10) = 14.97, p = .13, \Delta CFI = .00, \Delta TLI = .00$.

Third, after having established invariance of both factor loadings and factor correlations between gender and age groups, we further tested for invariance of error variances. Therefore, for both gender and age groups, two models were compared (in both models factor loadings and inter-factor correlations were fixed across groups): (a) an unconstrained model where all error variances were free to vary across groups; and (b) a constrained model where each error variance was set equal across groups. In this case as well, model comparisons indicated that error variances were equivalent across both gender, $\Delta\chi^2(15) = 30.44, p < .05, \Delta CFI = .00, \Delta TLI = .00$, and age groups, $\Delta\chi^2(15) = 107.08, p < .001, \Delta CFI = .00, \Delta TLI = .00$.

Gender and Age Differences on FIS Observed Mean Scores

In order to test for gender and age differences on mean scores of the five identity functions, we performed a Multivariate Analysis of Variance (MANOVA). Findings indicated that observed mean scores for the identity functions did not vary as a function of gender, $F(5, 1193) = 1.34, p = .25$, age $F(5, 1193) = 1.68, p = .14$, or Gender \times Age interaction, $F(5, 1193) = 1.73, p = .12$.

Overall mean scores are reported in Table 2. As the table indicates, scores were highest for the identity functions harmony and goals, intermediate for personal control and structure, and lowest for the future factor.

TABLE 2
Mean scores and standard deviation of the identity functions factors

	Mean	SD
Structure	3.54	0.72
Harmony	3.78	0.71
Goals	3.78	0.74
Future	3.33	0.85
Personal control	3.65	0.70

Note. Response scales ranged from 1 to 5, where 5 indicating high levels of structure, harmony, goals, future orientation, and personal control.

Convergent Validity

The final aim of the present study was to examine the convergent validity of the FIS. Accordingly, we computed bivariate correlations of FIS dimensions (i.e., structure, harmony, goals, future, and personal control) with identity commitment and sense of coherence. Findings (see

Table 3) revealed that, as hypothesized, all identity functions were positively related to both identity commitment and sense of coherence.

TABLE 3
Bivariate correlations of identity functions with identity commitment and sense of coherence

	Identity functions				
	Structure	Harmony	Goals	Future	Personal control
Identity commitment	.26***	.35***	.39***	.39***	.31***
Sense of coherence	.36***	.21***	.21***	.27***	.20***

Note. *** $p < .001$; $N = 1201$.

DISCUSSION

The aim of the present study was to validate the Italian version of the Functions of Identity Scale (FIS), a tool developed to assess the extent to which personal identity provides individuals with a sense of *structure*, *harmony*, and *personal control*; offers *goals* to strive for; and encourages a *future* orientation (Adams & Marshall, 1996; Serafini & Adams, 2002). Findings revealed that the FIS is also a promising tool for evaluating these functions in Italian late adolescents and emerging adults. This claim is supported by a number of results.

First, we found through CFAs that the five-factor structure of the FIS that emerged in previous studies conducted with North American youth (Serafini, 2008; Serafini & Adams, 2002; Serafini et al., 2006) was replicated with Italian young people as well. This factor structure was found to fit the data better than a one-factor model (i.e., general identity functions), providing further support to the theoretical conception of five functions of identity (Adams & Marshall, 1996). Hence, even though the five identity functions were found to be significantly interrelated, they are still somewhat distinct.

Second, we demonstrated that the FIS five-factor structure was equivalent across age and gender groups. Furthermore, mean comparisons indicated that, in line with previous findings (Serafini, 2008; Serafini et al., 2003), males and females, as well as younger and older participants, scored similarly on all identity functions. Overall, participants displayed high levels of harmony and goals, intermediate levels of personal control and structure, and lower levels of future orientation. This pattern is consistent with those found for the English version of the FIS used with Canadian samples. In fact, the present pattern is an exact match with Serafini (2008) and is highly consistent with Serafini (2007). Both of these Canadian studies found that participants scored highest on harmony and goals, intermediate on personal control and structure, and lowest on future orientation.

Third, we found that Cronbach's alphas were acceptable for harmony, goals, and future factors, whereas they were low for the structure and personal control dimensions. These low alpha coefficients were likely due to having only three items for each factor (Springer et al., 2002; Tabachnick & Fidell, 1996). An alpha below the acceptable level of .60 for the personal control factor was also recently reported for the English version of the FIS (Serafini, 2008). Using the

Spearman-Brown prophecy formula (Allen & Yen, 1979; Brown, 1910; Spearman, 1910), we found that adding three items (one to the structure subscale and two items to the personal control factor) to the current 15-item version of the FIS would result in acceptable Cronbach's alpha values across all subscales. Therefore, we encourage scholars interested in applying the Italian version of the FIS to utilize some additional items. Because the English version of the FIS has a long validation history, it makes most sense to choose these items among the English FIS items developed by Serafini and colleagues but that were not included in the final version of the measure. Based on the results of Serafini's (2007) most recent validity testing, one structure item loaded well across analyses (see Serafini & Adams, 2002; Serafini et al., 2003), but was dropped from the 15-item version during final model trimming. This structure item (i.e., "I accept who I am") could be added to the Italian version of the FIS and tested with an Italian sample. Again with regard to FIS construction history concerning the personal control factor, four additional items stand out as psychometrically and theoretically strong, but were deleted from the final model during model trimming (Serafini, 2007). Considering both psychometric and theoretical justifications, of these four items, the two to be considered for inclusion in the Italian FIS and to be tested are: "Making my own decisions is something I am good at" and "I am responsible for my actions."

Fourth, convergent validity of the Italian version of the FIS was demonstrated through theoretically consistent associations of the identity functions with identity commitment and sense of coherence. Specifically, findings indicated that all identity functions were significantly and positively related to commitment. These results are in line with an extant literature rooted in Eriksonian theory (1950, 1968), emphasizing that firm identity commitments provide a sense of structure, harmony, meaning, future orientation, and personal control (Adams & Marshall, 1996; Berzonsky, 2003; Crocetti, Rubini, & Meeus, 2008; Crocetti, Schwartz, Fermani, & Meeus, 2010; Marcia, 1966; Meeus, 1996; Meeus et al., 1999; Serafini & Adams, 2002). Furthermore, identity functions have been found to be positively related to perceptions of a sense of personal coherence (Antonovsky, 1987). It is worth noting that although identity and sense of coherence are theoretically related (Habermas & de Silveira, 2008), few studies have empirically investigated these links. For example, Luyckx et al. (2008) addressed this issue and found that sense of coherence is positively related to commitment and negatively related to a form of identity exploration characterized by hesitation and indecision. In the present study, we have found that sense of coherence is positively associated with all identity functions. Thus, sense of coherence, through its links with commitment (Luyckx et al., 2008), might foster the formation of a firm identity that provides structure, harmony, personal control, goals, and a sense of future orientation.

The results of the present study should be considered in light of some important limitations. First, we employed a cross-sectional design. Hence, we were not able to examine test-retest reliability of the FIS or to investigate stability of identity functions over time. Future longitudinal studies are necessary to address these issues.

Second, other identity dimensions rooted in Erikson's conceptualization might also be used to further demonstrate the convergent validity of FISs. In particular, Erikson's (1950) synthesis-confusion dimension can be assessed using the *Erikson Psychosocial Stage Inventory* (Rosenthal, Gurney, & Moore, 1981; cf. Schwartz, Zamboanga, Wang, & Olthuis, 2009), which measures the extent to which participants have a clear sense of who they are and what they believe in. Future research might use this measure in conjunction with the FIS.

Despite these limitations, the present findings suggest that the FIS is a promising tool for assessing identity functions in Italian late adolescents and emerging adults. Findings indicated that the five-factor structure of the FIS that was documented in previous studies conducted with English-speaking participants also emerged in the overall Italian sample, as well as across gender and age groups. However, we encourage scholars and practitioners who might want to use this tool to add some items to improve the internal reliability of FIS subscales. To improve construct validity, we suggest that such items be grounded in the available FIS scale construction and validity testing research to date. Beyond replication of the factor structure, convergent validity of the FIS was also demonstrated by meaningful associations between identity functions and identity commitment and sense of coherence.

Much of the empirical research on identity has focused on identity strategies (i.e., informational, normative, diffuse-avoidant; Berzonsky, 1989), identity processes (i.e., commitment and exploration; Marcia, 1966), and identity statuses (i.e., achievement, foreclosure, moratorium, diffusion; Marcia, 1966), which serve to help us better understand the processes by which identity is constructed. What is unique about the functions of identity model, however, is that it focuses instead on the outcomes of (rather than processes underlying) self-definition. This conceptualization concentrates on the outer workings of identity and examines the ways in which identity functions in a person's life (e.g., providing a sense of harmony and consistency between values, goals, and choices; providing self-relevant and personally meaningful goal-oriented direction; or providing a sense of structure by which to examine and understand information valuable for one's personhood). Five dimensions of identity functioning are examined simultaneously, where strength and competence in one area may be offset by challenges or setbacks in other areas (Serafini, 2007; Serafini & Adams, 2002). Thus, the identity functions model invites consideration of aspects of Erikson's identity construct not covered by other identity models, suggesting the importance of studying how having a well-consolidated sense of personal identity provides an individual with an organizing structure, goal and future orientations, self-regulation and agency, and the harmony associated with a congruence between one's personal values/beliefs and actions.

NOTE

1. Students born in the second half of the year complete high school when they are 18 years old, while those born in the months from January to June graduate from high school at 19. For this reason both the late adolescent group and the emerging adult group contain some participants who are 19.

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APPENDIX

Italian and English Versions of the Functions of Identity Scale (FIS)

1. Sono sicuro/a di conoscermi [I am certain that I know myself]
2. I miei valori e le mie convinzioni riflettono chi sono [My values and beliefs reflect who I am]
3. Ho costruito da solo i miei obiettivi personali [I have constructed my own personal goals for myself]
4. Ho un'idea chiara di quello che il futuro mi prospetta [I have a good idea of what my future holds for me]
5. Quando quello che faccio non funziona, sono capace di trovare varie soluzioni per raggiungere i miei obiettivi [When what I'm doing isn't working, I am able to find different approaches to meeting my goal(s)]
6. Mi sento in pace con me stesso e con la mia identità [I feel a sense of peace with my self and my identity]
7. I miei valori e le mie convinzioni sono coerenti con gli impegni che ho assunto in questo periodo della mia vita [My values and beliefs are consistent with the commitments that I make in my life at this time]
8. Tendo a fissare degli obiettivi e a lavorare per fare in modo di raggiungerli [I tend to set goals and then work towards making them happen]
9. Ho le idee chiare su chi sarò in futuro [I am clear about who I will be in the future]
10. Le decisioni che prendo su come comportarmi ed agire si basano sulle mie scelte personali [The decisions I make about how to behave and act are based on my personal choices]
11. sento, di giorno in giorno, di avere un senso di continuità personale [I feel I have a consistent sense of self from one day to the next]
12. I miei valori e le mie convinzioni corrispondono al tipo di persona che sono [My values and beliefs fit with the person I am]
13. Sono una persona decisa a raggiungere i miei obiettivi [I am a goal-directed person]
14. Pensare al mio futuro mi fornisce una direzione verso cui muovermi [Thinking about my future gives me a sense of direction]
15. Scelgo in maniera autonoma gli obiettivi che voglio raggiungere [I am self-directed when I set my goals]

Structure: items 1, 6, 11

Harmony: items 2, 7, 12

Goals: items 3, 8, 13

Future: items 4, 9, 14

Personal control: items 5, 10, 15.