



Published in final edited form as:

Eur J Psychol Assess. 2010 ; 26(2): 77–86. doi:10.1027/1015-5759/a000012.

Assessing Perceived Empathic and Social Self-Efficacy Across Countries

Laura Di Giunta¹, Nancy Eisenberg², Anne Kupfer², Patrizia Steca³, Carlo Tramontano¹, and Gian Vittorio Caprara¹

¹ Sapienza University of Rome, Italy

² Arizona State University, Arizona, USA

³ University of Milan Bicocca, Italy

Abstract

The Perceived Empathic Self-Efficacy Scale (PESE) and the Perceived Social Self-Efficacy Scale (PSSE) were developed to assess, respectively, individuals' self-efficacy beliefs regarding both empathic responding to others' needs or feelings and managing interpersonal relationships. In this study of young adults, a unidimensional factorial structure of both scales was found in Italy, the United States, and Bolivia. Complete invariance at the metric level and partial invariance at the scalar level were found across gender and countries for both scales. The construct and incremental validity of both PESE and PSSE were further examined in a different sample of Italian young adults. Patterns of association of the PESE or PSSE with self-esteem, psychological well-being, and the use of adaptive and maladaptive coping strategies were found, often over and beyond their associations with empathy or extraversion, respectively.

Keywords

empathic self-efficacy; social self-efficacy; interpersonal relationships; CFA; measurement invariance; incremental validity

Introduction

Self-efficacy beliefs are judgments about how effectively a person believes he or she can act in order to meet a goal or to cope effectively with challenging situations. Although these beliefs concern people's perceptions of their own capacities rather than actual capacities, a vast literature attests to the pervasive influence that self-efficacy exerts on individuals' performance and achievement in various tasks (Bandura, 1997). Self-efficacy beliefs influence self-regulative standards adopted by people, the amount of effort they invest, and the choices they make at crucial points in their life. They are not static traits, but rather dynamic constructs that can be enhanced through mastery experiences and learning (Bandura, 1997).

Traditionally, self-efficacy beliefs have been conceptualized as reflecting highly contextualized knowledge that affects appraisal processes, which in turn guide actions. This view has led researchers to emphasize self-efficacy on specific tasks and to pursue a multifaceted approach to the study of the various expressions of self-efficacy across diverse

situations. Recently, theoretical and empirical efforts were made to assess perceived self-efficacy on a broader level than the task-specific level commonly used in prior analyses of self-efficacy beliefs (Caprara, 2002). As people reflect on their experiences in specific settings, they may construct beliefs about their capabilities in various domains of functioning, including “clusters” of interrelated circumstances and situations such as self-efficacy beliefs associated with the domains of emotional understanding and interpersonal relationships (Bandura, Caprara, Barbaranelli, Gerbino, & Pastorelli, 2003; Caprara, 2002).

Perceived Empathic Self-Efficacy and Perceived Social Self-Efficacy

There is no doubt that rewarding relationships with others, lasting friendships, as well as positive emotional support and secure attachments play a pivotal role in individual development and functioning throughout the entire course of life (see Coe & Lubach, 2001). Moreover, empathy is an important predictor of interpersonal functioning and is believed to contribute to the development of affective bonds, understanding, and caring actions between people. For example, positive relations have been found between empathy or sympathy and children’s or adolescents’ social competence and quality of functioning in friendships (Eisenberg et al., 1996).

Moreover, building and maintaining good interpersonal relationships in any culture requires an effort and a large variety of assertive, communicative, social problem solving (i.e., an active response that may be constructive in the resolution of, for example, interpersonal conflicts), and empathic abilities (i.e., the ability to detect and affectively experience another’s emotional state; Davis, 1983; Kihlstrom & Cantor, 2000). Firm beliefs in one’s own capacities to be sensitive and to adequately respond to others’ feelings and needs as well as to handle interpersonal relationships are critical to promote successful adaptation and well-being (Caprara & Steca, 2005). Although we can expect the capabilities to experience another person’s feelings and to engage in social interactions to contribute to an individual’s perceived abilities to experience empathy and to competently engage in social interactions (i.e., perceived empathic self-efficacy [PESE] and social self-efficacy beliefs [PSSE]), a person could be empathic or socially skilled yet not hold self-perceptions consistent with these abilities (or vice versa). We can further presume that these two types of self-efficacy beliefs, although related, are not one and the same, being based on different skills (i.e., perceived capabilities to recognize and vicariously share others’ emotions and to manage different types of interpersonal relationships).

Based on this reasoning, two instruments were developed to assess PESE and PSSE. The PESE Scale is designed to assess individuals’ perceived capability to experience emotion from another’s perspective, to respond emotionally and compassionately to others’ distress and misfortune, and to be sensitive to how one’s actions affect others’ feelings (Bandura et al., 2003; Caprara, Gerbino, & Delle Fratte, 2001). PESE has been shown to be positively correlated with empathy, sympathy, perspective taking (Ranfone, 2008), and prosociality (Alessandri, Caprara, Steca, & Eisenberg, in press; Bandura et al., 2003), and negatively related to delinquent conduct (Bandura et al., 2003). The PSSE Scale measures people’s beliefs in their capabilities to voice their own opinions with others, to work cooperatively and to share personal experiences with others, and to manage interpersonal conflicts. PSSE has been found to be positively related to self-esteem, life satisfaction, and optimism (Caprara & Steca, 2005).

An individual’s sex has been associated with both PESE and PSSE. Women reported higher PESE (Caprara, Caprara, & Steca, 2003), in accordance with findings showing higher self- and other-perceived empathy in females than in males (Eisenberg & Lennon, 1983). In contrast, men scored higher than women in PSSE (Caprara et al., 2003), attesting to their

higher perceived ability to assertively manage interpersonal relationships in the larger social world.

Perceived Empathic Self-Efficacy and Perceived Social Self-Efficacy Across Cultures

Cultural values and beliefs play an important role in the development of interpersonal relationships (Chen, French, & Schneider, 2006). Specifically, they are believed to contribute to the evaluation of the appropriateness of social behavior, which in turn affects interpersonal relationships (Oettingen & Zosuls, 2006).

Some researchers found an association between adult interpersonal relationships and values associated with individualistic versus collectivistic cultures. Some have argued that the United States and other Western cultures encourage people to focus either on self and autonomy or on the preference for competition and personal goals (i.e., individualistic cultures; Hofstede, 2001; Oyserman, Coon, & Kimmelmeier, 2002). In contrast, East-Asian cultures encourage people to focus on the well-being of the group above an individual's own needs (i.e., collectivistic cultures; Kitayama & Markus, 1994). Based on arguments about collectivism-individualism (Triandis, 1995), one would expect that empathic self-efficacy, which is based on a focus on others' feelings and needs, should be valued more within collectivistic cultures. In contrast, it is unclear whether social self-efficacy, characterized by affiliative behavior and/or by assertive interpersonal behavior, should be valued differently in individualistic vs. collectivistic world-views. These hypotheses must be viewed as tentative due to the fact that collectivistic and individualistic values coexist in varying degree even within the same culture (Triandis, 1995).

Difficulties in investigating and comparing the relevance and meaning of socially relevant constructs in different countries can result from the lack of instruments validated across countries. Even though Bandura (2002) examined the functional role of efficacy beliefs and the processes through which they operate in both individualistic and collectivistic cultures, until now the specific role of either PESE or PSSE in social functioning has not been investigated cross-culturally. Thus, there is a need to examine the psychometric properties of these scales in different cultures to facilitate an investigation of between- and within-country differences in the relationship of self-efficacy to the quality of relationships and social behavior.

Overview

The two studies presented have the common aim of examining the psychometric properties of the PESE and PSSE. As their psychometric properties have been previously corroborated only with Italian samples (Caprara et al., 2003), Study 1 was designed to assess their generalizability across three countries (i.e., Italy, United States, and Bolivia). Compared to Italy and the United States, Bolivia is one of the poorest and politically most unstable Latin American countries, characterized by an extraordinary geographical, ethnic, and cultural variety. It is populated by a mixture of nationalities, including 40 different ethnic groups with their own languages and traditions. All these characteristics make Bolivia very different from Western countries such as Italy and the United States. As part of the ongoing validation of both scales, Study 2 examined the construct validity and incremental validity of the PESE and the PSSE scales, above and beyond the constructs of empathy and extraversion, respectively, in an additional Italian sample of young adults.

Study 1

In Study 1, we examined the extent to which the latent structure of the scales would be replicated across sex (separately in each country) and then across the three countries. We did

not have specific findings that lead us to hypothesize a differential functioning of the PESE and the PSSE scale scores across men and women in each country. Moreover, given the relative dearth of relevant cross-cultural research, we could not formulate clear hypotheses regarding differential functioning of the scales' scores across Italy, the United States, and Bolivia, although we could reasonably expect similarities across the three samples (Bandura, 2002).

Method

Participants—The Italian (153 males and 221 females), U. S. (190 males and 132 females), and Bolivian (129 men and 182 women) participants were college students ranging in age from 20 to 23 years ($M = 21.54, 20.67, \text{ and } 21.37$ years, $SD = 1.15, 0.90, \text{ and } 1.05$, respectively). Almost all Italian participants were of Italian extract; the U. S. sample consisted of non-Hispanic Caucasian (74%), Hispanic (9%), and “other” groups (6%); and 65% of Bolivians lived in rural areas, whereas 35% were urban residents. The Bolivians' socioeconomic status varied widely, depending on their geographical origin. Parents of participants in the urban area were in large part bus drivers, craftsmen, public and private clerks, and local merchants. In the rural area, the majority were engaged in agriculture.

Procedure—In Italy and the United States participants received credit as part of an introductory psychology course. In Bolivia, the scales were administered in classes at two colleges in an urban center and in a rural area. An Italian researcher and at least one Bolivian researcher were available during administration in order to assure comprehension of the items. No participants received payment for their involvement.

Measures—The Perceived Empathic Self-Efficacy (PESE) scale and Perceived Social Self-Efficacy (PSSE) scale were administered to all samples. The PESE and PSSE scales were translated and then backtranslated into English and Spanish by bilingual experts, who were very mindful of the adaptation of the items' content to the sociocultural context. Both PESE and PSSE items were developed in accordance with Bandura's guidelines (2006) and using a 5-point response scale (1 = *not well at all* to 5 = *very well*). In particular, the items were phrased in terms of *can do* rather than *will do* and were pretested, sufficient gradations of difficulties being built in to avoid ceiling effects.

The original 12 items of the PESE scale (see Table 2 for the items; Bandura et al., 2003) were subjected to a preliminary principal axis factoring analysis and 6 items that loaded below .40 were dropped to meet the requirements of survey reduced space. In another sample of Italian young adults, the correlation between the 12-item of original scale and the 6-item reduced scale was .95 ($df = 548$), $p < .01$. PSSE was assessed with 5 items tapping a range of social capacities (see Table 2 for the items). Cronbach's α s for the PESE and PSSE scales in the Italian, U. S., and Bolivian samples were .78–.69, .80–.76, and .81–.66, respectively.

Analytic Approach—Confirmatory factor analyses (CFAs) were computed for each sample, and a multiple-group approach (MGCFA) was used to test measurement invariance across sex and countries (using Mplus 3.0; Muthén & Muthén, 1998). Three consecutively more restrictive analyses of invariance were run with the maximum likelihood method of estimation. We tested three nested models (Vandenberg, 2002): configural invariance (i.e., the same pattern of fixed and free factor loadings was specified for each group), metric invariance (i.e., the same factor loadings for items were specified for each group), and scalar invariance (i.e., the same factor loadings and latent intercepts for the items were specified for each group). The most frequent additional tests were those of partial invariance at each step; modification indices (MI) from each step were used to refine the structure models

(Vandenberg, 2002). Evaluation of the goodness of fit for each model was based on those indices that are less sensitive to sample size. Comparative fit index (CFI) values of at least .95 are considered adequate for good models (Hu & Bentler, 1999). Root mean square error of approximation (RMSEA) and standardized root mean square residual (SRMR) values higher than .08 indicate a poor fit to the empirical data (Browne & Cudek, 1993; Kelloway, 1998). To test measurement invariance across sex and across countries, χ^2 difference tests were performed to compare nested models adopting a cutoff of $p < .01$, given that obtaining a significant χ^2 becomes increasingly likely with large sample sizes (Kline, 1998).

Results

Confirmatory Factor Analyses—With CFAs, the PESE and PSSE were modeled as two monodimensional scales that correlated with each other. This model provided a good fit to the data (see Table 1 for the fit indices separately by country). Before attaining these fits, sequential fit diagnostic evaluation analyses for each sample indicated points of ill-fit due to error covariance in some pairs of items. The covariation of error terms was freely estimated for one pair of items either for the PESE (items 4 and 6; modification index [MI] = 25.607) in the Italian sample, or for the PSSE (items 8 and 11; MI = 28.215) in the U. S. sample (see Figure 1 for the path diagram of CFA in each country). The correlation of the PESE with the PSSE for Italians was lower than in the U. S. sample or for Bolivians (Italians: $r(372) = .27$, $p < .001$; U. S.: $r(320) = .43$, $p < .001$; $z = -4.33$, $p < .001$; Bolivians: $r(309) = .43$, $p < .001$; $z = -3.91$, $p < .001$, respectively).

Gender Invariance—We investigated if the latent structures of the PESE and the PSSE were replicated, across sex, separately in each country. We included the correlation between errors for the Italian and the U. S. samples model testing as suggested by the CFAs (see Table 1 for the fit indices of the multigender CFAs separately by country). In the three samples, the fit indices for the configural invariance models suggested that the same factor structure existed for men and women for both the PESE and the PSSE. The mean change in overall χ^2 between the configural invariance model and the metric invariance model was nonsignificant in all three samples. Then we tested for scalar invariance and the mean change in overall χ^2 between the metric invariance model and the scalar invariance model was significant in the Italian sample, $\chi^2_{diff}(9, N = 374) = 34.29$, $p < .001$, suggesting that scalar invariance may not hold in this case. To test for partial scalar invariance, we found that, if the equality constraint was lifted from the intercept parameter associated with item 7 (PSSE), the mean change in overall χ^2 between the metric invariance model and the partial scalar invariance model was no longer significant, suggesting that at least partial scalar invariance held across men and women in the Italian sample. In both the U. S. and Bolivian sample, the mean change in overall χ^2 between the metric and the scalar invariance models was nonsignificant, suggesting that scalar invariance held across sex in these groups (see Table 2 for the unstandardized factor loadings and intercepts for the PESE and PSSE for men and women separately by country).

Country Invariance—We investigated whether the latent structures of the PESE and the PSSE were replicated across countries. As suggested by the CFAs, we included the correlation between two pairs of errors in order to have the same constraints for all groups. Adopting a cutoff of $p < .01$ (given that obtaining a nonsignificant χ^2 is unlikely with large sample sizes; Kline, 1998), the mean change in overall χ^2 between the configural invariance model and the metric invariance model was nonsignificant, $\chi^2_{diff}(18, N = 1007) = 31.144$, $p = .03$, suggesting that full metric invariance held across the three countries. We then proceeded with the test of scalar invariance: The mean change in overall χ^2 between the metric invariance model and the scalar invariance model was significant, $\chi^2_{diff}(18, N = 1007) = 210.397$, $p < .001$, suggesting partial scalar invariance. We found that the equality

constraint needed to be lifted from the following: two intercept items of the PESE (intercept items 1 and 5) in the Italian sample vs. the other two samples; two intercept items associated with the PSSE (intercept items 7 and 8) in the U. S. sample vs. the other two samples; and one intercept item associated with the PESE (intercept item 6) and one with the PSSE (intercept item 9) in the Bolivian sample vs. the other two samples. After releasing the constraints across these intercept scores, the mean change in overall χ^2 between the metric invariance model and the partial scalar invariance model was no longer significant, suggesting that at least partial scalar invariance held across the three countries: χ^2 (153, $N = 1007$) = 280.372, $p < .001$, CFI = .953, RMSEA = .050 (.040–.059), SRMR = .050, χ^2_{diff} (12, $N = 1007$) = 20.352, $p = .06$ (see Table 3 for the unstandardized factor loadings and intercepts for the PESE and the PSSE scales across the three samples).

Study 2

This study examined the construct validity of the PESE and the PSSE in the Italian context. We examined the relations of PESE and PSSE to self-esteem, psychological well-being, and coping. In light of earlier findings, both PESE and PSSE were expected to correlate positively with self-esteem (Bracke, Christiaens, & Verhaeghe, 2008; Caprara & Steca, 2005), psychological well-being (PWB), and adaptive coping strategies (Devonport & Lane, 2006), although the PSSE was expected to relate more strongly with self-esteem and PWB (Caprara & Steca, 2005). Moreover, both the PESE and PSSE were expected to correlate negatively with maladaptive coping strategies. Finally, in order to examine the uniqueness of PESE from actual individual empathic skills (i.e., empathy) and the uniqueness of PSSE from actual individual social skills (e.g., extraversion; Richard, Brooke, & Kyoung-Rae, 2008), we tested whether the PESE and PSSE were related to self-esteem, PWB, and coping when partialling out indices of empathy or extraversion, respectively.

Method

Participants—Participants were 323 (73% female) young adults aged 20 to 24 years ($M = 22.47$; $SD = 1.04$). They represented a convenience sample recruited from a national survey study. They were residents in various geographic areas of Italy, almost all of Italian extract, single, and varied widely in socioeconomic status. 75% had at least a high school education; 82% were undergraduates, 9% were merchants or employees in various businesses, and other groups accounted for 6% or less of the sample.

Procedures—Participants were contacted by a group of trained researchers who explained the battery of tests. Participants provided written consents and were not paid for their participation in the research.

Measures—Participants completed the PESE, the PSSE, and the following measures.

Empathy: Participants rated (1 = *never/almost never true*; 5 = *almost always/always true*) the frequency experiencing empathy on four items taken from the Prosociality Scale (which assesses prosocial behavior as well as empathic concern; Caprara, Steca, Zelli, & Capanna, 2005; “I am empathic with those who are in need,” “I easily put myself in the shoes of those who are in discomfort,” “I immediately sense my friends’ discomfort even when it is not directly communicated to me,” “I intensely feel what others feel”; $\alpha = .77$). These items were generated using different criteria (feeling empathic emotion or sympathy for another) than the items on prosocial behavior (e.g., helping or sharing), although we view empathic concern as one component of the broader construct of prosociality. The four empathy-related items were highly correlated with empathic concern ($r = .63$, $p < .01$; $df = 261$) as measured

by a commonly used measure of adults' empathy – Davis' Interpersonal Reactivity Index (1983; Ranfone, 2008) – and exhibits high stability across time.¹

Energy-Extraversion: This was measured with a short version of the Big Five Questionnaire (BFQ; 1 = *very false for me*; 5 = *very true for me*; 12 items, e.g., “I am an active and vigorous person”; $\alpha = .80$; Caprara, Schwartz, Capanna, Vecchione, & Barbaranelli, 2006). The short form included the items with the best psychometric properties from the original extended form of the BFQ (132 items; Caprara, Barbaranelli, Borgogni, & Perugini, 1993). In another sample of Italian young adults, the correlation between the full set of 24-energy/extraversion items and the 12-item of the reduced energy/extraversion form was .91 ($df = 560$), $p < .01$.

Self-Esteem: Participants rated (1 = *strongly disagree*; 4 = *strongly agree*) their self-worth on the 10-item Rosenberg (1965) scale (e.g., “I feel that I have a number of good qualities”; $\alpha = .88$).

Psychological Well-Being: Participants rated (1 = *strongly disagree*, 6 = *strongly agree*) a short version of the Psychological Well-Being Scale designed to measure positive relations with others, self-acceptance, autonomy, personal growth, environmental mastery, and purpose in life (3 items per dimensions; Ryff & Keyes, 1995; Ruini, Ottolini, Rafanelli, Ryff, & Fava, 2003). Because these six domains load on a single underlying factor (see Springer, Hauser, & Freese, 2006), we combined the 18 items to form a single composite of psychological well-being ($\alpha = .83$).

Coping: Participants rated (1 = *I usually don't do this at all*; 4 = *I usually do this a lot*) items on the Brief Coping Orientation to Problems Experienced Inventory (Carver, 1997; Steca, Accardo, & Capanna, 2001) to assess several coping strategies (2 items per each scale). For the purposes of this study, we selected the coping strategies that recently are the most discussed in the literature (e.g., Skinner, Edge, Altman, & Sherwood, 2003). These are related to Active Coping ($\alpha = .71$), Positive Reframing ($\alpha = .70$), the use of Emotional and Instrumental Support (α s = .78 and .61), and Behavioral Disengagement ($\alpha = .62$). Planning and Denial were dropped due to their low reliabilities (α s = .44 and .39), although preliminary analyses indicated that these measures related to other variables in a manner similar to, respectively, active coping and behavioral disengagement.

Analytical Approach—In order to explore the construct validity of the PESE and PSSE, zero-order correlations were calculated between both scales and indicators of self-esteem, psychological well-being, and coping strategies. A *t*-test was used to test the difference between each set of two dependent correlations (i.e., the correlations of each variable with the PESE versus with the PSSE; Chen & Popovich, 2002). Zero-order correlations were computed for empathy and energy/extraversion with the examined indicators, and we tested the differences between the dependent correlations (Chen & Popovich, 2002) of each indicator with the PESE (or PSSE) versus the correlation of the same indicator with empathy (or energy/extraversion). Partial correlations coefficients also were computed between the PESE and the examined indicators with empathy partialled out and between PSSE and the examined indicators with the energy/extraversion partialled out. We also tested the difference between all the above-mentioned independent correlations for men vs. for women (Chen & Popovich, 2002).

¹Data are available from the first author.

Results

Table 4 (second and third columns) shows the correlations among PESE or PSSE with indicators of self-esteem, psychological well-being (PWB), and coping strategies. Both scales were either low or moderately correlated with almost all the indices; in particular, they were negatively related with behavioral disengagement coping strategy and positively related with self-esteem, PWB, and more constructive types of coping – positive reframing correlated significantly only with PSSE. In comparison to PESE, PSSE was more positively related to self-esteem and PWB, and more negatively related to behavioral disengagement. Table 4 (fourth and fifth columns) also includes the zero-order correlations of empathy or energy/extraversion with the examined indicators. In comparison to empathy, PESE was more positively related to self-esteem, PWB, and active coping, and less positively related to the use of emotional support. There were no significant differences between the correlations of the validity indicators with the PSSE versus energy/extraversion scores. Moreover, PESE was more highly related to empathy ($r = .53, p < .01; df = 321$) than to PSSE ($r = .35, p < .01; df = 321$), whereas PSSE was more highly related to energy/extraversion ($r = .57, p < .01; df = 321$) than to PESE.

Finally, as shown in Table 4 (sixth and seventh columns), when controlling for empathy, we found the relations between PESE and the examined indicators to be still significant except for emotional and instrumental support coping. When controlling for energy/extraversion, we found the relations between PSSE and the indicators to be still significant except for the positive reframing. We found no significant sex differences for all the correlations reported in Table 4.

Discussion and Conclusions

Two studies supported the psychometric properties of scales measuring perceived empathic or social self-efficacy (PESE and PSSE). Confirmatory factor analyses in Study 1 confirmed the monodimensionality of both scales in three very different countries: Italy, where the scales were originally developed, the United States, and Bolivia. Residual correlations between one pair of items for either the PESE in the Italian sample or the PSSE in the U. S. sample were freely estimated; examination of the content of these items suggests that they focus on empathy with internalizing emotions (for the PESE) or more general (rather than specific) social skills (for the PSSE), over and above, respectively, Italian college students' capability to experience another's emotion and U. S. college students' capability to share personal experiences with others. Consistent with the expectations based upon the collectivism-individualism distinction (Triandis, 1995), the correlation between the PESE and the PSSE was higher in Bolivia than in Italy. In Bolivia, culturally valued, socially competent behavior may be particularly likely to be characterized by both a focus on others' well-being and by affiliative behaviors/interpersonal cooperation, which lead to a greater association between self-efficacy in regard to these two sets of skills. However, we found that the correlation between PESE and PSSE was also significantly different between samples from two individualistic contexts (i.e., U. S. students had a higher correlation than Italians) in accordance with the argument that the cultural differences attributed to this taxonomy may not be generalizable across populations (Oyserman et al., 2002).

We also examined measurement invariance across sex and across countries. At the intercept level for the PESE, no gender differences were found in all three samples. With respect to the PSSE, at the intercept level, no gender differences were found in the U. S. and Bolivian samples, whereas one intercept item was different in the Italian sample. Thus, cross-sex comparison of factor means, especially for the United States and Bolivia, may be considered meaningful. Measurement invariance across the three countries was entirely supported at the factorial structure and at the pattern level, whereas it was only partially supported at the

intercept level. Overall, the PESE and the PSSE constructs do not have exactly the same meaning across the three countries. Caution is warranted with regard to drawing straightforward conclusions because the estimated factor mean difference may differ depending on the anchor indicators chosen for the factors (Vanderberg, 2002).

The results of Study 2 provided further support for the construct validity and incremental validity of the PESE and the PSSE scales, which predicted self-esteem, well-being, coping over and above their association with, respectively, empathy and energy/extraversion. As hypothesized, the two scales were positively correlated with self-esteem and with psychological well-being (Bracke et al., 2008; Ryff & Keyes, 1995), as well as with adaptive rather than maladaptive coping (Devonport & Lane, 2006). The fact that the correlation between PESE and PSSE was lower than the correlations between PESE and empathy and between PSSE and energy/extraversion further attests to the distinction of PESE and PSSE. It is not surprising that the correlations between self-efficacy beliefs and dispositions that pertain to the same domains of functioning are higher than the intercorrelation between self-efficacy beliefs that pertain to different domains of functioning. Rather, the high correlations between PESE and empathy and between PSSE and energy/extraversion call attention to the mediational role that self-efficacy beliefs might play in channeling and fully actualizing basic dispositions. In this regard, recent findings attest to the role of PESE in mediating the influence of agreeableness on prosociality (Caprara, Alessandri, Di Giunta, Panerai, & Eisenberg, 2009). Future studies should further investigate the extent to which the PESE mediates the effects of empathy as well as the extent to which the PSSE mediates the effect of energy/extraversion.

The cross-sectional nature of the present research does not allow inferences with regard to causal relations. Nevertheless, the present findings do suggest that PESE and PSSE may be important beliefs for building and benefiting from effective, gratifying social network.

The availability of instruments assessing perceived self-efficacy characterized by strong psychometric properties and high generalizability is of crucial importance to both researchers and practitioners from Western and at least some non-Western countries, as they allow researchers to identify individuals' strengths and limitations in various types of relationships and life contexts. In this regard, the PESE and the PSSE scales can be used for intervention studies developed to promote personal success and social adjustment in interpersonal relations. In particular, consistent with Pössel, Baldus, Horn, Groen, and Hautzinger (2005), practitioners may use the PESE or the PSSE as a moderator of the effectiveness of prevention programs (or as an outcome variable) designed to strengthen individuals' internal resources related to interpersonal relationships.

Both studies have their limitations. It would be desirable to address the same topics using broader, community-based samples rather than the restricted samples reported in the present study (i.e., college students). Studying college students may present a threat to the generalizability of the findings and may not provide an accurate representation of differences between societies (Oyserman et al., 2002). Also it would be desirable in future studies to use a larger variety of items tapping different facets of both PESE and PSSE to address the limitations of actual *us*.

In accordance with social cognitive theory, we believe that no one other than the self can report on internal states and personal beliefs (Bandura, 1997). Yet we do not underestimate the value of multimethod/multiinformant strategies to reduce the risk of self-indulgence bias as well as of shared method variance, and ultimately to strengthen the generalizability of our findings.

Finally, future empirical efforts should better clarify the Bolivian within-culture differences (e.g., between those who live in urban versus rural areas). Moreover, studies in other Western and non-Western cultures would be useful for further examining the psychometric properties of these measures and their usefulness in studies in diverse cultures.

Acknowledgments

The research reported in this article was supported by grants from the Italian Ministry University and Research (COFIN-2002, Prin-2005) and by a National Institutes of Mental Health grant to Nancy Eisenberg. The paper was prepared while Laura Di Giunta and Carlo Tramontano were visiting scholars at Arizona State University as a part of an international exchange between Sapienza University of Rome and the Department of Psychology and the School of Family and Social Dynamic at Arizona State University.

References

- Alessandri G, Caprara GV, Steca P, Eisenberg N. Reciprocal relations among self efficacy beliefs and prosociality across time. *Journal of Personality*. (in press).
- Bandura, A. *Self-efficacy: The exercise of control*. New York: Freeman; 1997.
- Bandura A. Social cognitive theory in cultural context. *Journal of Applied Psychology: An International Review* 2002;51:269–290.
- Bandura, A. Guide to the construction of self-efficacy scales. In: Pajares, F.; Urdan, T., editors. *Self-efficacy beliefs of adolescents*. Greenwich, CT: Information Age Publishing; 2006. p. 307-337.
- Bandura A, Caprara GV, Barbaranelli C, Gerbino M, Pastorelli C. Role of affective self-regulatory efficacy on diverse spheres of psychosocial functioning. *Child Development* 2003;74:769–782. [PubMed: 12795389]
- Bracke P, Christiaens W, Verhaeghe M. Self-esteem, self-efficacy, and the balance of peer support among persons with chronic mental health problems. *Journal of Applied Social Psychology* 2008;38:436–459.
- Browne, MW.; Cudeck, R. Alternative ways of assessing model fit. In: Bollen, KA.; Long, SJ., editors. *Testing structural equation models*. Newbury Park, CA: Sage; 1993. p. 136-162.
- Caprara, GV. Personality psychology: Filling the gap between basic processes and molar functioning. In: von Hofsten, C.; Bakman, L., editors. *Psychology at the turn of the Millennium: Volume 2. Social, developmental and clinical perspectives*. Hove, UK: Psychology Press; 2002. p. 201-224.
- Caprara, GV.; Alessandri, G.; Di Giunta, L.; Panerai, L.; Eisenberg, N. The contribution of agreeableness and self-efficacy beliefs to prosociality. 2009. Manuscript submitted for publication
- Caprara JV, Barbaranelli C, Borgogni L, Perugini M. The Big Five Questionnaire: A new questionnaire to assess the Five-Factor model. *Personality and Individual Differences* 1993;15:281–288.
- Caprara GV, Caprara G, Steca P. Personality's correlates of adult development and aging. *European Psychologist* 2003;8:131–147.
- Caprara, GV.; Gerbino, M.; Delle Fratte, A. Autoefficacia interpersonale [Interpersonal self-efficacy]. In: Caprara, GV., editor. *La valutazione dell'autoefficacia [Self-efficacy evaluation]*. Trento: Erickson; 2001. p. 5-50.
- Caprara GV, Schwartz SH, Capanna C, Vecchione M, Barbaranelli C. Personality and politics: Traits, values, and political orientation. *Political Psychology* 2006;27:1–28.
- Caprara GV, Steca P. Affective and social self-regulatory efficacy beliefs as determinants of positive thinking and happiness. *European Psychologist* 2005;4:275–286.
- Caprara GV, Steca P, Zelli A, Capanna C. A new scale for measuring adults' prosocialness. *European Journal of Psychological Assessment* 2005;21:77–89.
- Carver CS. You want to measure coping but your protocol's too long: Consider the brief COPE. *International Journal of Behavioral Medicine* 1997;4:91–100.
- Chen, X.; French, D.; Schneider, B. *Cambridge Studies in Social and Emotional Development*. New York: Cambridge University Press; 2006. *Peer relationships in cultural context*.

- Chen, PY.; Popovich, PM. Correlation: Parametric and nonparametric measures. Newbury Park, CA: Sage; 2002.
- Coe, CL.; Lubach, GR. Social context and other psychological influences on the development of immunity. In: Ryff, CD.; Singer, BH., editors. *Emotion, social relationships, and health*. London: Oxford University Press; 2001. p. 243-261.
- Davis M. Measuring individual differences in empathy: Evidence for a multidimensional approach. *Journal of Personality and Social Psychology* 1983;44(1):113–126.
- Devonport TJ, Lane AM. Relationships between self-efficacy, coping and student retention. *Social Behavior and Personality* 2006;34:127–138.
- Eisenberg N, Fabes RA, Murphy B, Karbon M, Smith M, Maszk P. The relations of children's dispositional empathy-related responding to their emotionality, regulation, and social functioning. *Developmental Psychology* 1996;32:195–209.
- Eisenberg N, Lennon R. Sex differences in empathy and related capacities. *Psychological Bulletin* 1983;94:100–131.
- Hofstede, G. *Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations*. 2. Thousand Oaks, CA: Sage; 2001.
- Hu L, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling* 1999;6:1–55.
- Kelloway, EK. *Using LISREL for structural equation modeling: A researcher's guide*. Thousand Oaks, CA: Sage; 1998.
- Kihlstrom, F.; Cantor, N. Social intelligence. In: Sternberg, RJ., editor. *Handbook of intelligence*. New York: Cambridge University Press; 2000. p. 359-379.
- Kitayama, S.; Markus, HR. *Emotion and culture: Empirical studies of mutual influence*. Washington, DC: American Psychological Association; 1994.
- Kline, RB. *Principles and practices of structural equation modeling*. New York: Guilford; 1998.
- Muthen, LK.; Muthen, BO. *Mplus user's guide*. Los Angeles: Muthen & Muthen; 1998.
- Oettingen, G.; Zosuls, KM. Culture and self-efficacy in adolescents. In: Pajares, F.; Urdan, T., editors. *Self-efficacy beliefs of adolescents*. Greenwich, CT: Information Age Publishing; 2006. p. 245-266.
- Oyserman D, Coon HM, Kimmelmeier M. Rethinking individualism and collectivism: Evaluation of theoretical assumptions and meta-analyses. *Psychological Bulletin* 2002;128:3–72. [PubMed: 11843547]
- Pössel P, Baldus C, Horn AB, Groen G, Hautzinger M. Influence of general self-efficacy on the effects of a school-based universal primary prevention program of depressive symptoms: A randomized and controlled follow-up study. *Journal of Child Psychology and Psychiatry* 2005;46:982–994. [PubMed: 16109001]
- Ranfone, S. Unpublished Master's thesis. Sapienza University of Rome; Rome, Italy: 2008. *Empatia, autoefficacia empatica e comportamento prosociale nei giovani-adulti [Empathy, self-efficacy, and prosocial behavior in young adults]*.
- Richard LM, Brooke D, Kyoung-Rae J. Social connectedness, extraversion, and subjective well-being: Testing a mediation model. *Personality and Individual Differences* 2008;45:414–419.
- Rosenberg, M. *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press; 1965.
- Ruini C, Ottolini F, Rafanelli C, Ryff C, Fava GA. La validazione italiana delle Psychological Well-Being Scales (PWB) [Italian validation of the PWB]. *Rivista di Psichiatria* 2003;38:117–130.
- Ryff C, Keyes CL. The structure of psychological well-being revisited. *Journal of Personal and Social Psychology* 1995;69:719–727.
- Skinner E, Edge K, Altman J, Sherwood H. Searching for the structure of coping: A review and critique of category systems for classifying ways of coping. *Psychological Bulletin* 2003;129:216–269. [PubMed: 12696840]
- Springer KW, Hauser RM, Freese J. Bad news indeed for Ryff's six-factor model of well-being. *Social Science Research* 2006;35:1120–31.
- Steca P, Accardo A, Capanna C. La misura del coping, differenze di genere e di età [The measurement of coping. Gender and age differences]. *Bollettino di Psicologia Applicata* 2001;235:47–56.

Triandis, H. Individualism and collectivism. Boulder, CO: Westview Press; 1995.

Vandenberg RJ. Toward a further understanding of and improvement in measurement invariance methods and procedures. *Organizational Research Methods* 2002;5:139–158.

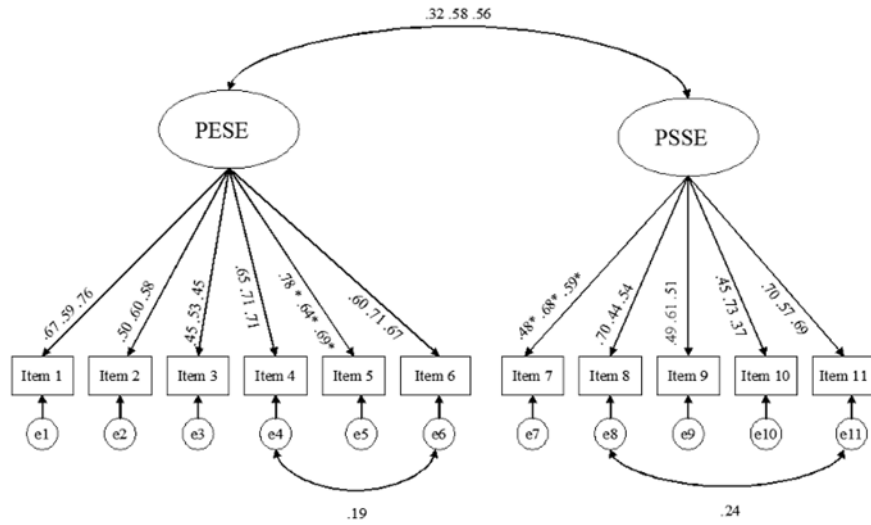


Figure 1. Path diagram of the PESE and the PSSE Scales in Italy, the United States, and Bolivia. *Note.* *indicates factor loadings fixed to 1. *e1–e11* represent error terms. Respective to Italian, U.S., and Bolivian samples, standardized factor loadings are shown on the straight arrows; standardized factors and error term inter-correlations are shown on the curved arrows. The intercorrelation of the error terms between items 4 and 6 was freed only in the Italian sample; the correlation between error terms between items 8 and 11 was freed only in the U. S. sample.

Table 1

Fit indices for the multi gender CFAs (MGCFAs) of the PESE and PSSE scales separately for each sample

	χ^2	df	p	CFI	RMSEA	Confidence interval	χ^2_{diff}	df _{diff}	p
Italian sample CFA: two oblique factor model	78.694	42	<.001	.960	.049	(.032-.065)			
MGCFAs: Configural invariance	118.933	84	.007	.962	.047	(.025-.066)			
MGCFAs: Metric invariance	134.699	93	.003	.955	.049	(.029-.067)	15.766	9	.072
MGCFAs: Partial scalar invariance	145.955	101	.002	.952	.049	(.030-.066)	11.256	8	.187
U. S. sample CFA: two oblique factor model	101.263	42	<.001	.938	.066	(.050-.083)			
MGCFAs: Configural invariance	155.382	84	<.001	.927	.073	(.055-.090)			
MGCFAs: Metric invariance	166.432	93	<.001	.925	.070	(.053-.087)	11.05	9	.272
MGCFAs: Scalar invariance	184.880	102	<.001	.916	.071	(.055-.087)	18.448	9	.030
Bolivian sample CFA: two oblique factor model									
MGCFAs: Configural invariance	116.150	86	.017	.964	.048	(.021-.069)			
MGCFAs: Metric invariance	129.051	95	.012	.959	.048	(.024-.068)	12.001	9	.167
MGCFAs: Scalar invariance	137.375	104	.016	.960	.046	(.021-.065)	8.324	9	.50

Note. PESE = Perceived Empathic Self-Efficacy; PSSE = Perceived Social Self-Efficacy; CFA = confirmatory factor analysis.

Table 2

Unstandardized values of loadings and intercepts from multigender confirmatory factor analyses of the PESE and the PSSE scales

Item	Factor loadings (Men – Women)						Intercepts (Men – Women)		
	Italy	U.S.	Bolivia	Italy	U.S.	Bolivia	Italy	U.S.	Bolivia
1. Read your friends' needs?	1.00	.82	1.15	3.89	3.74	3.84			
2. Recognize when someone wants comfort and emotional support, even if (s)he does not overtly exhibit it?	.95	.77	.95	3.39	3.65	3.57			
3. Recognize whether a person is annoyed with you?	.77	.66	.66	3.72	3.84	3.94			
4. Recognize when a person is inhibited by fear?	1.17	.85	1.10	3.60	3.91	3.80			
5. Recognize when a companion needs your help?	1.15	.84	1.00	3.82	3.86	3.94			
6. Recognize when a person is experiencing depression?	1.02	1.00	1.02	3.51	3.77	3.93			
7. Express your opinion to people who are talking about something of interest to you?	.78	1.37	1.37	3.80–3.39	4.02	3.70			
8. Work or study well with others?	1.00	1.00	1.00	3.82	3.67	3.87			
9. Help someone new become part of a group to which you belong?	.74	1.32	1.01	3.62	3.81	4.00			
10. Share an interesting experience you had with other people?	.65	1.42	.87	3.84	4.04	3.98			
11. Actively participate in group activities?	1.04	1.31	1.44	3.61	3.76	3.87			

Note. One value under each column means invariant constraints (i.e., the same factor loading/intercept held for men and women in that country). Two values under each column indicate that the constraint was relaxed (i.e., there were different factor loadings/intercepts for men and women).

Table 3

Unstandardized values of loadings and intercepts from multisample CFA of the PESE and the PSSE

	Factor loadings			Intercepts		
	Italy	U.S.	Bolivia	Italy	U.S.	Bolivia
PESE						
ITEM 1	1.41			3.92 ^a	3.59	3.59
ITEM 2	1.28				3.42	
ITEM 3	1.00				3.74	
ITEM 4	1.53				3.64	
ITEM 5	1.46			3.86 ^a	3.62	3.62
ITEM 6	1.28			3.54	3.54	3.72 ^a
PSSE						
ITEM 7	1.07			3.53	3.79 ^a	3.53
ITEM 8	.88			3.76	3.50 ^d	3.76
ITEM 9	1.00			3.59	3.59	3.85 ^a
ITEM 10	.98				3.83	
ITEM 11	1.10				3.55	

Note. CFA = confirmatory factor analysis; PESE = Perceived Empathic Self-Efficacy; PSSE = Perceived Social Self-Efficacy. One value under Factor loadings or Intercepts columns mean invariant constraints (i.e., the same factor loading/intercept held across the three countries).

^aThis value differed statistically from the other two in the same column under Intercepts.

Table 4

Results of the construct validity for the PESE and PSSE scales

	Mean (SD)	Zero-order correlations			Partial correlations		
		PESE	PSSE	Empathy	Energy/Extraversion	PESE ^a	PSSE ^b
Self-esteem	3.06 (.48)	.12* ^c	.33**	-.03 ^d	.39**	.17**	.14*
PWB	3.68 (.48)	.23** ^c	.44**	.12* ^d	.44**	.20**	.25**
Active coping	3.29 (.53)	.22**	.31**	.10 ^d	.27**	.21**	.20**
Positive reframing	2.84 (.64)	.09	.16**	.03	.18**	.09	.07
Emotional support	3.21 (.69)	.22**	.16**	.37** ^d	.10	.03	.13*
Instrumental support	3.15 (.57)	.17**	.22**	.24**	.19**	.05	.14*
Behavioral disengagement	1.84 (.53)	-.19** ^c	-.33**	-.10	-.36**	-.16**	-.16**

Note. PESE = Perceived Empathic Self-Efficacy; PSSE = Perceived Social Self-Efficacy.

^aEmpathy was partialled out.

^bEnergy/Extraversion was partialled out.

^cThis value indicates a significant difference between the relations of a given variable with PESE vs. with PSSE ($p < .01$).

^dThis value indicates a significant difference between the relations of a given variable with PESE vs. with Empathy ($p < .01$). The scores for each indicator were computed with the mean of each scale's items. Pearson's correlations were significant at $p < .01$ ** or $< .05$ *. $r_{PESE \text{ with PSSE}} = .35$, $r_{PESE \text{ with Empathy}} = .53$, $r_{PSSE \text{ with Energy/Extraversion}} = .57$. Means (SD): PESE = 3.66 (.50), PSSE = .57 (.52), Empathy = 3.67 (.67), Energy/Extraversion = 3.08 (.56).