

We are IntechOpen, the world's leading publisher of Open Access books Built by scientists, for scientists

6,900

Open access books available

186,000

International authors and editors

200M

Downloads

Our authors are among the

154

Countries delivered to

TOP 1%

most cited scientists

12.2%

Contributors from top 500 universities



WEB OF SCIENCE™

Selection of our books indexed in the Book Citation Index
in Web of Science™ Core Collection (BKCI)

Interested in publishing with us?
Contact book.department@intechopen.com

Numbers displayed above are based on latest data collected.
For more information visit www.intechopen.com



The Role of Resilience and Psychological Well-Being in School Engagement and Perceived Academic Performance: An Exploratory Model to Improve Academic Achievement

Arantzazu Rodríguez-Fernández,
Estibaliz Ramos-Díaz and Inge Axpe-Saez

Additional information is available at the end of the chapter

<http://dx.doi.org/10.5772/intechopen.73580>

Abstract

The aim of the present study is to examine the relationship between resilience, subjective well-being and academic achievement (i.e., school engagement and perceived performance). To achieve this, a battery of instruments was applied to 945 Compulsory Secondary Education students from Basque Country (425 boys and 520 girls) of medium socio-cultural level and aged between 12 and 17 ($M_{age} = 14.50$, $SD = 1.82$). The study tests a structural model for analyzing the effects of resilience and subjective well-being on school engagement and perceived performance. The findings provide evidence in favor of the influence of resilience and subjective well-being as decisive psychological variables in the prediction of school engagement and perceived performance. Finally, the results of this study highlight the need to foster education of resilience and subjective well-being to improve academic achievement among adolescent students.

Keywords: resilience, subjective well-being, school engagement, academic achievement, adolescence

1. Introduction

Although resilience is an object of study in many different disciplines within the social and health sciences, there is currently no single definition of the term that has been unanimously accepted by the scientific community [1]. However, almost all definitions are built around

two key aspects: significant exposure to risk and positive adaptation [1, 2]. According to the American Psychiatric Association [3], resilience is the process of adapting well in the face of adversity, trauma, tragedy, threats or significant sources of stress.

From this eminently human-centered perspective, numerous definitions of resilience have been proposed in the field of psychology, with each being subject to the specificities of the various conceptual trends endorsed by their authors and hence the widely accepted need to clarify and specify the construct [4]. As so as it often happens with scientific terms, there is currently no consensus regarding the definition of resilience in research, although the majority of authors agree that it involves resistance to or a positive and effective way of coping with situations of risk and adversity [1].

Therefore, on the one hand, we have those definitions which view resilience as a process. In this sense, Masten [1] defined it as the capacity for or the result of successful adaptation despite challenging or threatening circumstances. Later, Luthar and Zigler [5] described resilience as a dynamic process which results in positive adaption within a context of severe adversity. These authors distinguished three main aspects to this construct: adversity, positive adaptation and the emotional, cognitive and sociocultural mechanisms which influence human development. Luthar et al. [6] defined resilience as a dynamic process encompassing positive adaptation in a context of significant adversity. In other words, the individual is exposed to a high-intensity risk and yet, at the same time, deploys a series of adaptive behaviors despite the impact of possible threats to their development process. Another similar definition was proposed by Masten [7] and refers to resilience as a type of phenomenon characterized by good results despite serious threats to adaptation or development. Subsequently, Luthar [8] defined resilience as the expression of positive adjustment despite the significant adversities of life, while Wyman et al. ([9], p., 308) stated that “resilience reflects a diverse set of processes that alter children’s transactions with adverse life conditions to reduce negative effects and promote mastery of normative developmental tasks.”

However, resilience has also been understood as the individual capacity or ability to survive and regain one’s balance after experiencing certain traumatic events. Richardson et al. [10] suggested that resilience develops thanks to an intrinsic or extrinsic driving force that emerges from the processes of overcoming trauma. Based on this theoretical model [10, 11], Connor and Davidson [12] defined resilience as the set of personal qualities that enable a person to prosper in situations of adversity. In other studies, resilience has been defined as a synonym of vulnerability reduction [13], the ability to tolerate experiences of change and adversity [14], the ability to adapt to adversity [15], effective coping [16], a complex behavioral repertoire [17] and personal stability or recovery [18].

Nevertheless, despite these differing definitions, a series of common characteristics can be identified which relate resilience with human strengths, some kind of disturbance and subsequent growth, adaptive coping and positive results despite adversity. This study is based on the definition of resilience proposed by Connor and Davidson [12], who claimed that the phenomenon encompassed personal qualities that enable the individual to prosper despite exposure to adversity [7]. Based on Richardson’s model [10, 11], these authors opt for a variable construct, rather than a static vision of what resilience means. Indeed, at an empirical level, it has been demonstrated that resilience is a multidimensional characteristic which

varies in accordance with context, time, age, sex and cultural origin, and may even emerge in different ways in the same individual, depending on their circumstances [19]. From this perspective, resilience is seen as referring to a pattern of positive adaptation, with resilient individuals demonstrating a resilient pattern or resilient qualities, which enable them to cope successfully with stress. In turn, this individual set of resilient qualities is itself immersed in a process of dynamic interaction with other intrinsic or environmental variables which influence the individual's ability to adapt to adverse situations.

As mentioned above, the increasingly popular salutogenic approach offers the opportunity to examine the role of resilience in the field of clinical psychology. As Ursano points out ([20], p., 274), "the study of response to trauma should include the study of resilience and health." In specific terms, the antecedents of Connor and Davidson's model [12] are subject to the efforts made by these two researchers to assess resilience as an index of health or well-being.

The Connor-Davidson Resilience Scale (CD-RISC) [21] was developed specifically to measure the effects of pharmacotherapy and other therapeutic intervention methods. The clinical improvement observed in the study was documented by the scale, with high scores in resilience being proportional to the global improvement experienced by the individual. According to Prince-Embury [22], these results are relevant because scores on the scale have been shown to be sensitive to real changes in subjects' psychological well-being, thus suggesting that high resilience levels are related to an improvement that goes beyond the mere alleviation of symptoms. They are also important because they indicate that resilience is subject to change. Thus, the study helped corroborate the fact that resilience is quantifiable, modifiable and can be improved through interventions [12, 23].

One of the variables that is related to both resilience and the academic field is psychological well-being. Psychological well-being can be divided into three basic components: (a) satisfaction with life; (b) positive affect; and (c) negative affect [24]. Thus, for a person to achieve high levels of subjective well-being, they need to feel satisfied with life, have a predominantly positive affectivity and a low level of negative affect. Thus, psychological well-being is purely evaluative and subjective, the most important element being how each individual assesses his or her own life [25].

The inclusion of the satisfaction with life concept as a key variable in psycho-educational studies is a positive development, since the manifestation of the feeling of well-being in relation to oneself can be considered a personal development milestone within the educational context [26]. Satisfaction with life has been identified as a cognitive component of subjective well-being and is expressed in the form of an individual's global judgment of their life [27]. As such, life satisfaction is the result of the comparisons made by the subject regarding the events of their life, against a standard established by themselves [28]. Satisfaction with life is therefore conceived as a resulting variable that assesses the self-perception of global satisfaction.

As regards positive/negative affect, a person's position on the psychological well-being scale is a result of their position in two independent dimensions: positive affect and negative affect [29]. Thus, an individual will have a high level of psychological well-being to the extent to which positive affect predominates over the negative affect. These two dimensions are independent from each other, making it impossible to predict a subject's score in the negative

dimension on the basis of their score in the positive affect one and vice versa. The most recent study found [30] corroborates this, since satisfaction with life was observed to correlate significantly with both positive and negative affect, with all correlations being moderately strong, while positive and negative affect were not found to be significantly correlated with each other, thus indicating that they are independent constructs.

Subjective well-being, commonly called “happiness,” is affected by a number of psychological factors, including resilience. Scientific research has found that, firstly, resilience is positively associated with satisfaction with life and, secondly, that it is negatively associated with negative affect and positively associated with positive affect [31]. It is also known that resilient people who progress toward their goals have higher levels of positive affect and satisfaction with life [32]. In other words, those individuals who cope with and adapt better to stressful situations and adversity feel better about themselves and are happier than their non-resilient counterparts.

In broad terms, subjective well-being provides a measure of how good we feel about ourselves and how happy we are. Although we are dealing here with a concept that is difficult to delimit, most authors agree that the following elements should, at least, be taken into account: its subjective nature, which is rooted in each individual’s own experience; its global dimension, since it encompasses an assessment or judgment about all aspects of life; and the need to include positive measures, since its nature goes beyond the mere absence of negative factors. It is therefore important to consider the effect of resilience on two major dimensions: the cognitive and the emotional or affective dimension.

A positive relationship has been observed between resilience and satisfaction with life, with those evincing a resilient pattern tending to believe in their own ability to overcome adverse situations, which translates into a greater sense of well-being [33]. Indeed, resilience has been consistently identified as a particularly relevant variable for satisfaction with life in diverse studies which report a positive, concurrent relationship between resilience and this construct. In other words, sufficient empirical evidence exists to confirm the beneficial effect of resilience on satisfaction with life. Indeed, longitudinal studies have verified that resilience during the first phase of life strongly predicts satisfaction with life during the second phase [32, 34]. Resilience has also been found to correlate positively with satisfaction with life and negatively with depression, through the mediator mechanism known as the cognitive triad (positive cognitions about oneself, the world and the future) [31].

The empirical evidence found in this field confirms diverse theoretical models which provide specific information about the association between resilience and well-being indicators. In this sense, resilience has been found to play a mediator role in the relationship between positive affect and satisfaction with life, suggesting that people who feel happy have higher levels of satisfaction not only because they feel better, but also because they have developed psychological resources such as resilience in order to live better [35]. Empirical conformation has also been provided for another model in which resilience serves as a predictor variable of the cognitive-evaluative component of subjective well-being, that is, the more resilient a person is, the more satisfied they feel with life [36]. It has also been proposed that the link between resilience and satisfaction with life is strongly mediated by the affective aspect of subjective well-being [37].

Thus, one of the psychological traits that foster satisfaction with life is the individual capacity to overcome adversity and grow despite it. It seems that those who adapt better to stressful situations and more easily to adversity are also those who feel most satisfied with their lives, unlike their non-resilient counterparts.

A large number of studies report a strong link between psychological resilience and positive emotional states, finding that individuals with a resilient profile experience more positive emotions in stressful situations than less resilient subjects, even though they experience similar levels of negative emotions. This is because they have a greater capacity to overcome adversity and grow [38]. A diverse range of methodologies (self-reports, observation and longitudinal studies) have been used to demonstrate that resilient people are characterized by having positive affect, with findings indicating that these individuals possess an enthusiastic and energetic attitude to life, as well as curiosity and openness to new experiences [39, 40]. They also tend to deploy positive emotions in order to effectively cope with adverse situations, including humor [7, 19], relaxation [41] and optimistic thought [42]. Folkman and Moskowitz [43] argue that attaching a positive meaning to the events of everyday life and having a problem-centered coping style may help generate positive emotions in adverse situations. In other words, resilience has been found to facilitate positive affect and alleviate negative affect.

There is also support, however, for a relationship in the opposite direction, with positive emotional states leading to higher levels of resilience in the future [44]. This means that resilience is partly due also to the appearance of positive emotions, since when faced with a stressful event, the balance between positive and negative emotions has an impact on how the individual copes with adversity [38]. In the review conducted by Salovey et al. [45] on the effects of positive emotions, one of the aspects analyzed was related to the immune system, since being optimistic and having positive emotions provides the body with resources for coping with health problems, fosters the development of resilience and may motivate healthy behavior. In other words, positive emotional states may facilitate healthy behavioral practices, providing individuals with the resilient capacity they need to cope with the possibility of having or developing serious health problems. These same authors point out the existence of empirical findings that are consistent with the association between positive emotional states and an increase in the availability of psychological resources such as resilience.

Tugade et al. [16] argue along the same lines when they state that positive emotions are not simply a product of resilient traits but also play a very important role in resilient people's capacity to recover from stressful events. Positive emotions broaden cognitive and behavioral repertoires, playing a reparatory role in situations which generate negative emotions. This theoretical perspective suggests that the ability to feel positive emotions constitutes an essential part of the mechanisms which protect against adversity. Moving further along in this direction, the theoretical work carried out by Greco et al. [46] suggests that positive emotions are a resource which fosters the development of a resilient process during childhood.

Finally, the research conducted by Ong et al. [47] suggests that resilience generates other adaptive assets, catalyzing or triggering a cascade of positive experiences. In comparison with people who have low resilience levels, highly resilient individuals have a greater capacity to react to situations and are more disposed to view daily events in a positive light. These authors later

added the observation that positive emotions constitute a basic building block for resilience [47]. The results of their research indicate that feeling positive emotions fosters the ability to adequately recover from circumstances of daily stress. Swaminath and Rao [48] argue something similar in their theoretical review of studies which have contributed to identifying the tangible effects of positive emotions, highlighting the influence of positive affect on cognitive flexibility and the construction of psychological resources such as resilience, optimism and creativity.

In any case, the findings of the aforementioned studies suggest a relationship between the aspects of resilience and the positive dimension of emotionality. As for the direction of this relationship, it is clear that resilient people are characterized by their ability to feel positive emotions when faced with situations of risk or adversity. Equally, positive affect has been identified by empirical studies as one of the factors, which fosters resilience. In short, one may assume that resilience is a good indicator of affective balance, which implies feeling more positive and fewer negative emotions, although this relationship has hardly been explored at all to date.

Although the usefulness of resilience in school contexts has been widely recognized [49], the application of a resilience-based approach within educational research is unusual [50]. Consequently, prior research analyzing the relationship between resilience and school engagement is scarce [51], although with the emergence of positive psychology a number of studies have linked resilience to other educational factors and variables such as the presence of a motivational climate in the classroom [52], the use of diverse motivational and emotion regulation strategies and academic performance among adolescents [53]. Therefore, and although it has not yet been fully established that resilience is indeed a stable predictor of a higher level of school engagement, a positive correlation can be hypothesized between the two variables, with students who respond in a more resilient manner to stressors in the school context being more likely to react in an adaptive fashion to the school itself and their academic work. They are also more likely to participate more in school life and dedicate more time to learning tasks than their non-resilient counterparts.

We found only two studies which refer to the effect of resilience on school engagement. The first one was conducted from a community perspective and reports that certain contextual factors associated with resilience (cultural adherence and commitment to the community) affect school engagement, suggesting that greater school engagement may be the result of efforts by the school to improve certain resilient aspects of the environment [54]. The second study is a recent publication that links resilience with school engagement [51] and aims to identify the external and internal factors that predict resilience in a sample of students in a socially disadvantaged situation, observing a positive relationship between the two study variables. It has also been found that non-resilient students are more impacted by contextual risk variables (neighborhood, school climate or risky friendships), with resilience softening the negative effect of said contextual factors on academic performance [53]. Other authors have observed too that students with better academic results score higher for certain characteristics associated with resilience [55]. Similarly, it is worth highlighting the existence of a large body of research that, when studying “academic resilience,” defines the construct as performance, with resilient students being seen as those who achieve good academic results [56].

Finally, and from the perspective of psychopedagogic guidance rather than scientific research, Skinner and Pitzer [57] propose a perspective on school engagement that emphasizes its role in organizing the daily school experiences of children and youth, as well as their cumulative learning, long-term achievement and eventual academic success. The proposed intervention is enriched by the inclusion of concepts such as “daily resilience,” which focuses on the analysis of how students respond to mistakes, difficulties or failures at school. The authors conclude that the same personal and interpersonal resources that promote engagement may shape students’ reactions to challenges and obstacles, with academic coping being an especially important bridge back to reengagement.

Only a few studies to date have focused on the impact of satisfaction with life and emotions on indicators of school adjustment, and there is a pressing need for more empirical evidence regarding the relationship between the indicators of personal well-being and educational variables [58]. Nevertheless, it is a well-accepted fact that students’ perception of their own well-being is better the more engaged they are with their school [59]. In this sense, prior research suggests that subjective well-being is a strength related to adaptive results during adolescence, including positive school experiences [60]. Based on the importance of simultaneously analyzing all three components of subjective well-being [61], Heffner and Antaramian’s study [62] demonstrated that both satisfaction with life and affective states predict adaptive functioning and even flourishing at school, represented by the following indexes: school engagement and academic performance.

If we look at the cognitive component of subjective well-being separately, we see that it has been consistently linked to school adaptation indicators such as perceived academic ability, positive attitudes toward school, school engagement and the value of the importance of school [63]. There are also theoretical approaches which support the connection between academic performance and satisfaction with life [64]. As regards the affective component of subjective well-being, longitudinal studies have linked negative emotions with non-adaptive results at school and school failure [65]. In relation to the positive affect indicator of subjective well-being, evidence exists, which points to positive emotions being associated with school success [62].

In addition to the information reported regarding each of the study variables and their interrelations, evidence also exists of the indirect effect of contextual variables on satisfaction with life, with school engagement as a mediating variable of the said effect [66].

Most prior research has focused on analyzing the relationship between these variables, either in a bivariate fashion or in short-reaching descriptive methodologies. More advanced research methods are required that are capable of establishing relationships of influence between the different variables in order to enable the testing of predefined explanatory theoretical models. One such research method is structural equation modeling (SEM). Taking all the relationships between all the variables outlined above into consideration, a hypothesized theoretical model was developed according to which resilience directly predicts subjective well-being and indirectly predicts school engagement and perceived academic performance levels through subjective well-being (see **Figure 1**).

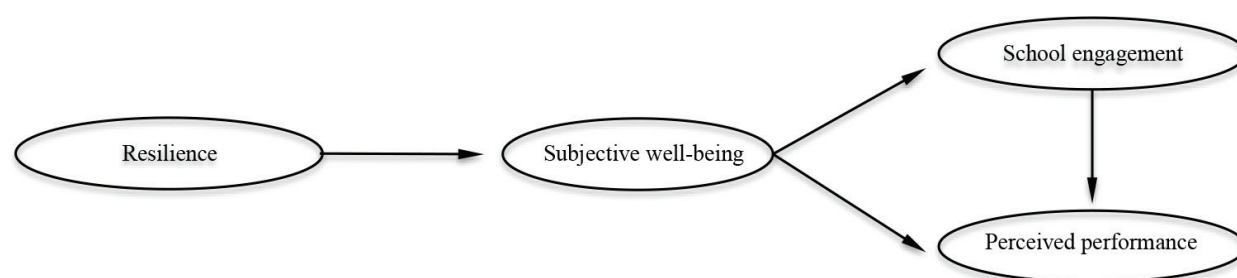


Figure 1. Proposed theoretical structural model.

2. Method

2.1. Participants

Participants were chosen from among secondary school students attending schools in the Autonomous Region of the Basque Country (ARBC). The sample group comprised 945 adolescent students (425 boys and 520 girls; $M_{\text{age}} = 14.50$, $SD = 1.82$; range 12–17) from a mid-level socio-cultural context. The students were distributed throughout the different school years as follows: Year 1 of Compulsory Secondary Education (CSE) (25.2%); Year 2 of CSE (18.7%); Year 3 of CSE (18.7%); Year 4 of CSE (16.1%); and the 2-year Spanish Baccalaureate (21.9%).

2.2. Variables and measurement instruments

Resilience was evaluated using the *CD-RISC 10 Resilience Scale* [67]. The 10 items of this abbreviated version of the Connor-Davidson Resilience Scale [12] are scored on a 5-point Likert-type scale (higher scores reflecting greater resilience until 40). The reliability and validity of the CD-RISC 10 to be adequate in one large sample of adolescents were found [69]. In this study, the internal consistency coefficient obtained was $\alpha = 0.75$.

The Spanish version of the *Satisfaction With Life Scale* (SWLS) by Diener, Emmons, Larsen and Griffin [28, 68] was used to evaluate *satisfaction with life*. This scale measures global cognitive judgments of satisfaction with one's life on a 7-point Likert-type scale. The internal consistency coefficient obtained for the sample used in the present study was $\alpha = 0.82$. The minimum score is set at 5, while the maximum score is 35 points. The authors have also established the following rating ranges for a better interpretation of their results: from 31 to 25 = extremely satisfied; from 26 to 30 = satisfied; from 21 to 25 = slightly satisfied; 20 = neither satisfied nor dissatisfied; from 15 to 19 = slightly dissatisfied; from 10 to 14 = dissatisfied; from 4 to 9 = extremely dissatisfied. This questionnaire has been implemented successfully in various studies with populations of adolescents [66, 69].

Affect balance was measured using Bradburn's *Affect Balance Scale* [29]. The scale comprises 18 items to which responses are given on a 4-point Likert-type scale. The scale has shown adequate reliability and validity in a population of adolescents [24]. The Cronbach's alpha reliability coefficients obtained with our sample were positive affect (0.78) and negative affect (0.78). The score obtained by a subject is within a theoretical range between 9 and 36 points for each positive or negative scale.

School engagement was evaluated using the *School Engagement Measure* (SEM) by Fredericks, Blumenfeld, Friedel and Paris [70, 71]. The measure consists of 19 items to which participants respond on a 5-point Likert-type scale. Based on these 19 items, the authors obtain 3 factors which measure behavioral (with 4 items), emotional (5 items) and cognitive engagement (7 items), which are the 3 measures used for this study. The reliability assessment resulted in adequate internal consistency indexes for all three factors. With the sample group used in this study, the internal consistency for the scale was $\alpha = 0.72$ for behavioral engagement, $\alpha = 0.70$ for emotional engagement and $\alpha = 0.78$ for cognitive engagement. The possible score in the behavioral dimension ranges from 4 to 20, in the emotional dimension from 5 to 25 and in the cognitive one from 7 to 35 [71].

Perceived academic performance was evaluated using the *Brief School Adjustment Scale* (EBAE-10) by Moral de la Rubia et al. [72]. This multidimensional questionnaire comprises 10 items with 6 response options, grouped into 3 indicators of school adjustment: problems with school integration, academic performance and academic expectations. For the purposes of this study, only the *academic performance* subscale was used, referring to participants' perceptions of their own performance as students. The subscale comprises three items, including "I get good grades" and "I think I'm a good student." The internal consistency of the subscale was $\alpha = 0.77$. The total score ranges from 3 to 18 and a higher score indicates a higher level of academic performance.

2.3. Procedure

A number of schools were randomly chosen from a list of all schools in the Autonomous Region of the Basque Country (ARBC), and different year groups within each school were selected in accordance with the interests of the study. The battery of questionnaires was administered to participants class by class during school hours. Throughout the process, care was taken to ensure that all participation was strictly voluntary, and the anonymity of the responses given was protected in order to reduce the social desirability bias. The single blind criterion was used, with students being unaware of the purpose of the study. The study complied with the ethical values established for psychological research and assessment and respected the basic principles laid out in the American Psychology Association's (APA's) ethics code and in current regulations (informed consent and the right to information, protection of personal data and confidentiality guarantees, non-discrimination, non-remuneration and the right to withdraw from the study at any time).

2.4. Data analysis

Missing values (2.1%) were inferred using the expectation maximization (EM) algorithm and the Markov chain Monte Carlo (MCMC), offered by the LISREL 8.8 program. Extreme values (1.3%) were eliminated using the SAS program. To ensure normality, the bootstrap method was applied, as offered by the AMOS 24 program.

A Pearson correlation analysis was conducted between the study variables with the aim of determining any possible connections between them and to verify the non-existence of multicollinearity. A descriptive analysis was also carried out of the means and standard deviations of all the study variables. Both the descriptive statistics and the correlation coefficients were

calculated using the SPSS 22 program. To test the structural regression model we used the structural equation modeling (SEM) technique, provided by the AMOS 24 program. In the first step, the measurement model is analyzed to check that each of the latent variables is represented by its indicators. In the second step, the analyses for testing the structural model are carried out using the maximum likelihood (ML) procedure.

3. Results

3.1. Measurement model

The measurement model included four latent variables (*resilience*, *subjective well-being*, *school engagement* and *perceived academic performance*) whose indicators, in the case of resilience and perceived academic performance, were the items on the questionnaire administered. As for the variables *subjective well-being* (satisfaction with life, positive affect and negative affect) and *school engagement* (cognitive engagement, behavioral engagement and emotional engagement), the indicators were the parcels of the different scales. The analysis of the measurement model (see **Table 1**) revealed an acceptable fit: $\chi^2_{(129)} = 491.471$, $p < 0.001$; CFI = 0.921; TLI = 0.906; SRMR = 0.050; RMSEA = 0.054 (90% CI = 0.049–0.060). All factor loadings of the latent variable indicators were significant ($p < 0.01$), which implies that all latent factors are represented by their corresponding indicators.

3.2. Theoretical model analysis

Once the measurement model had been analyzed, the global fit of the proposed theoretical model (**Figure 1**) was estimated. This model proposes that *resilience* is positively related to *subjective well-being* which, in turn, has predictive power for *school engagement* and *perceived academic performance*, thus playing a mediator role between resilience and the two indicators of school adjustment.

The complete mediation model (**Figure 2**) postulates that resilience is positively related to subjective well-being, which has predictive power for both indicators of school adjustment, thus playing a mediator role between resilience and school engagement and perceived academic performance. An initial analysis of the resulting parameters revealed that the model fit the empirical data in an acceptable manner, ($\chi^2_{(131)} = 665.196$, $p < 0.001$; GFI = 0.928; CFI = 0.883; TLI = 0.864; SRMR = 0.057; RMSEA = 0.066; RMSEA confidence interval 90% = 0.049–0.060).

Model	$\chi^2_{(df)}$	CFI	TLI	SRMR	RMSEA _(CI)	ECVI _(CI)
M ₁	665.196 ₍₁₃₁₎	0.883	0.864	0.057	0.066 _(0.049–0.060)	0.608 _(0.540–0.683)

Note: CFI and TLI > 0.90 (acceptable fit); RMSEA and SRMR 0.05 ≥ 0.08 (acceptable fit).

Table 1. Goodness of fit parameters for the complete mediation model (M₁).

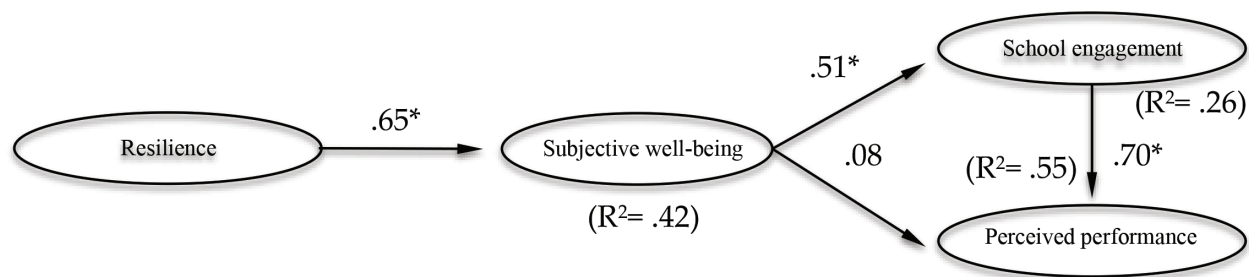


Figure 2. Standardized solution of the complete mediation model.

3.3. Direct and indirect effects between the study variables

When the regression coefficients of the proposed model were analyzed separately, it was found that all the direct pathways proposed were significant at a level of $p < 0.01$, with the exception of the *subjective well-being-perceived academic performance* pair ($\beta = 0.080$, $p > 0.0$). Specifically, *resilience* was found to have a predictive power of 65% for *subjective well-being*. As regards the indicators of school adjustment, *subjective well-being* was found to directly determine *school engagement* ($\beta = 0.510$, $p > 0.01$), which in turn predicted *perceived academic performance* ($\beta = 0.697$, $p > 0.01$).

As regards the indirect effects on both indicators of school adjustment (*school engagement* and *perceived academic performance*), for which the proportion of variance explained was 26% for *school engagement* and 55% for *perceived academic performance*, the results indicate that *resilience* has an indirect effect on *school engagement*, mediated by the level of *subjective well-being*. Furthermore, if *perceived academic performance* is added to this last pathway, then *subjective well-being* and *school engagement* act simultaneously as mediator variables between *perceived academic performance* and *resilience* ($\beta = 0.355$, $p > 0.01$).

4. Discussion of the results

As we had hypothesized, during compulsory secondary education, resilience predicts subjective well-being directly and school engagement and perceived academic performance indirectly. It is therefore clear that perceiving oneself as being able to cope successfully with adverse situations has a significant impact on young people's personal and school-related adaptation. Thus, the results of this study confirm that postulated by prior research [16]. The idea that subjective well-being is present in people who are capable of successfully coping with the challenges and problems of life are a reasonable one. However, it was necessary to demonstrate this idea among the adolescent population and indeed, the results obtained here do just that.

The findings reported by studies focusing on the satisfaction with life construct support both the formulation of the hypothesis regarding its dependence on resilience and the results

obtained in this regard here. Empirical evidence exists of the role played by resilience as a predictor variable which has a positive effect on the cognitive component of subjective well-being [36]. Similarly, it has been suggested that resilience catalyzes or triggers a cascade of positive emotions in situations of stress [38], and it is therefore likely that there is also a dependent relationship between resilience and the affective component of subjective well-being.

Consequently, the results of this present study demonstrate that, as we expected, resilience has a direct, positive influence on subjective well-being, measured through satisfaction with life and emotional experience. It is important to highlight the fact that, as found in other studies also [73], resilience has a strong predictive power for positive affect, followed by satisfaction with life and, finally, negative affect. Consistently with that reported by previous studies, we can therefore confirm the idea that people's perceptions of their own capacity to overcome adversity are one of the key aspects which determine their feeling of personal well-being [33]. Thus, it can be concluded that a stronger perception of one's ability to cope with challenges and risks leads to a more positive assessment of one's life so far and prompts more positive and fewer negative emotions. As such, resilience influences personal adaptation during adolescence.

The relationship between resilience and school engagement has been analyzed by only a few studies, all of which coincide in identifying a positive relationship between the two variables [54]. At the same time, other studies confirm the close links between resilience and other educational variables which, like school engagement, are indicators of school adjustment [52]. However, no studies exist which focus on the influence of resilience on school engagement from the three-dimensional perspective adopted here. In this sense, the relationships analyzed in the regression model and the results obtained therefore make a novel contribution to this particular field of study. The results reported here show that the indirect predictive power of resilience for school engagement is significant, with high levels of resilience prompting individuals to become more engaged in school activities, probably because they see themselves as being more capable of coping with the adverse situations that may arise in the school context, thanks to their higher level of resilience [65] and their greater degree of subjective well-being. When adolescent students feel more able to cope with adversity, they feel happier and more satisfied with life, and both of these facets prompt them to engage more in school activities (behavioral engagement), identify more with the school (emotional engagement) and invest more in the learning process (cognitive engagement).

Another finding worth highlighting is the direct influence of psychological well-being on school engagement. This finding partly confirms that reported in previous studies, such as the one by Heffner and Antaramian [62], in which the authors argue that components of subjective psychological well-being (satisfaction with life and affective states) predict adaptive functioning at school, represented by the school engagement and school performance indexes. While the structural model tested in this study highlights the direct influence of subjective well-being, it only does so in relation to school engagement, not perceived academic performance, which it influences indirectly through school engagement. In other words, students with higher levels of psychological well-being also feel more engaged at school and consequently have a better perception of their academic performance as a result of this engagement.

The structural model that was empirically tested in this study revealed resilience and subjective well-being to be decisive psychological variables for predicting both school engagement and perceived academic performance. The fact that students' resilience and subjective well-being are factors which explain part of the variation observed in school engagement (indirectly in the first case and directly in the second) reaffirms the importance of focusing on these variables in educational contexts [69]. However, it also provides important insights into how to act: for students who feel less engaged at school, preventive education and psychological intervention in the school environment should focus on fostering resilience, the achievement of greater satisfaction with life and actions designed to increase positive affect. Only in this way will we help students become more engaged in the school context, which will in turn undoubtedly help improve their academic results.

Acknowledgements

The present study was carried out within the Consolidated Research Group IT934-16 of the Basque University System and within the research projects EHUA 15/15 and PPG1761 of the University of the Basque Country and EDU2017-83949P from MINECO of Spain.

Author details

Arantzazu Rodríguez-Fernández*, Estibaliz Ramos-Díaz and Inge Axpe-Saez

*Address all correspondence to: arantzazu.rodriquez@ehu.eus

University of the Basque Country, Universidad del País Vasco/Euskal Herriko Unibertsitatea, Vitoria-Gasteiz, Spain

References

- [1] Masten AS. Global perspectives on resilience in children and youth. *Child Development*. 2014;**85**(1):6-20. DOI: 10.1111/cdev.12205
- [2] Luthar SS, Cicchetti D. The construct of resilience. *Development and Psychopathology*. 2000;**12**:857-885. DOI: 10.1017/S0954579400004156
- [3] American Psychiatric Association. *Handbook of Psychiatric Measures*. Washington, DC: American Psychiatric Association; 2004
- [4] Davydov DM, Stewart R, Ritchie K, Chaudieu I. Resilience and mental health. *Clinical Psychology Review*. 2010;**30**:479-495. DOI: 10.1016/j.cpr.2010.03.003
- [5] Luthar SS, Zigler E. Vulnerability and competence: A review of research on resilience in childhood. *American Journal of Orthopsychiatry*. 1991;**61**(1):6-22. DOI: 10.1037/h0079218

- [6] Luthar SS, Cicchetti D, Becker B. The construct of resilience: A critical evaluation and guidelines for future work. *Child Development*. 2000;**71**(3):543-562. DOI: 10.1111/1467-8624.00164
- [7] Masten AS. Ordinary magic: Resilience processes in development. *American Psychologist*. 2001;**56**(3):227-238. DOI: 10.1037/0003-066X.56.3.227
- [8] Luthar SS. *Resilience and Vulnerability: Adaptation in the Context of Childhood Adversities*. New York: Cambridge University Press; 2003
- [9] Wyman PA, Cowen EL, Work WC, Hoyt-Meyers L, Magnus KB, Fagen DB. Caregiving and developmental factors differentiating young at-risk urban children showing resilient versus stress-affected outcomes: A replication and extension. *Child Development*. 1999;**70**(3):645-649. DOI: 10.1111/1467-8624.00047
- [10] Richardson GE, Neiger B, Jensen S, Kumpfer K. Resiliency model. *Health Education*. 1990;**21**:33-39
- [11] Richardson GE. The metatheory of resilience and resiliency. *Journal of Clinical Psychology*. 2002;**58**(3):307-321. DOI: 10.1002/jclp.10020
- [12] Connor KM, Davidson JT. Development of a new resilience scale: Connor-Davidson resilience scale (CD-RISC). *Depression and Anxiety*. 2003;**18**:76-82. DOI: 10.1002/da.10113
- [13] Hofer MA. Evolutionary basis of adaptation in resilience and vulnerability: Response to Cicchetti and Blender. *Annals of the New York Academy of Sciences*. 2006;**1094**:259-262. DOI: 10.1196/annals.1376.030
- [14] Campbell-Sills L, Cohan SL, Stein MB. Relationship of resilience to personality, coping, and psychiatric symptoms in young adults. *Behaviour Research and Therapy*. 2006;**44**(4): 585-599. DOI: 10.1016/j.brat.2005.05.001
- [15] Stanton AL, Revenson TA, Tennen H. Health psychology: Psychological adjustment to chronic disease. *Annual Review of Psychology*. 2007;**58**:565-592. DOI: 10.1146/annurev.psych.58.110405.085615
- [16] Tugade MM, Fredrickson BL, Feldman-Barrett L. Psychological resilience and positive emotional granularity: Examining the benefits of positive emotions on coping and health. *Journal of Personality*. 2004;**72**(6):1161-1190
- [17] Agaibi CE, Wilson JP. Trauma, PTSD, and resilience: A review of the literature. *Trauma, Violence & Abuse*. 2005;**6**(3):195-216
- [18] Leipold B, Greve W. Resilience: A conceptual bridge between coping and development. *European Psychologist*. 2009;**14**(1):40-50. DOI: 10.1027/1016-9040.14.1.40
- [19] Werner EE, Smith RS. *Overcoming the Odds: High Risk Children from Birth to Adulthood*. Ithaca, NY US: Cornell University Press; 1992
- [20] Ursano RJ. Posttraumatic stress disorder: The stressor criterion. *Journal of Nervous and Mental Disease*. 1987;**175**(5):273-275. DOI: 10.1097/00005053-198705000-00005

- [21] Connor KM, Sutherland SM, Tupler LA, Churchill LE, Malik ML, Davidson JRT. Fluoxetine in posttraumatic stress disorder: A randomized, placebo-controlled trial. *The British Journal of Psychiatry*. 1999;**175**:17-22
- [22] Prince-Embury S. The Connor-Davidson resilience scale. In: Prince-Embury S, Saklofske DH, editors. *Resilience in Children, Adolescents, and Adults: Translating Research into Practice*. New York: Springer Science+Business Media; 2013. pp. 161-166. DOI: 10.1007/978-1-4614-4939-3_12
- [23] Vaishnavi S, Connor K, Davidson JT. An abbreviated version of the Connor-Davidson resilience scale (CD-RISC), the CD-RISC2: Psychometric properties and applications in psychopharmacological trials. *Psychiatry Research*. 2007;**152**(2-3):293-297. DOI: 10.1016/j.psychres.2007.01.006
- [24] Rodríguez-Fernández A, Goñi-Grandmontagne A. La estructura tridimensional del bienestar subjetivo. *Anales de Psicología*. 2011;**27**(2):327-332
- [25] Diener E. Subjective well-being: The science of happiness and a proposal for a national index. *American Psychologist*. 2000;**55**(1):34-43. DOI: 10.1037/0003-066X.55.1.34
- [26] Rodríguez-Fernández A, Droguett L, Revuelta L. Ajuste escolar y personal en la adolescencia: El papel del autoconcepto académico y del apoyo social percibido. *Revista de Psicodidáctica*. 2012;**17**(2):27-32. DOI: 0.1387/Rev.Psicodidact.3002
- [27] Pavot W, Diener ED, Colvin CR, Sandvik E. Further validation of the satisfaction with life scale: Evidence for the cross-method convergence of well-being measures. *Journal of Personality Assessment*. 1991;**57**(1):149-161
- [28] Atienza F, Pons D, Balaguer I, García-Merita M. Propiedades psicométricas de la Escala de Satisfacción con la Vida en Adolescentes. *Psicothema*. 2000;**12**(2):314-319
- [29] Bradburn N. *The Structure of Psychological Well-Being*. Chicago: Aldine; 1969
- [30] McCullough G, Huebner E, Laughlin JE. Life events, self-concept, and adolescents' positive subjective well-being. *Psychology in the Schools*. 2000;**37**(3):281-290. DOI: 10.1002/(SICI)1520-6807(200005)37:3<281::AID-PITS8>3.0.CO;2-2
- [31] Mak WS, Ng IW, Wong CY. Resilience: Enhancing well-being through the positive cognitive triad. *Journal of Counseling Psychology*. 2011;**58**(4):610-617. DOI: 10.1037/a0025195
- [32] Klohnen EC, Vandewater EA, Young A. Negotiating the middle years: Ego-resiliency and successful midlife adjustment in women. *Psychology and Aging*. 1996;**11**(3):431-442. DOI: 10.1037/0882-7974.11.3.431
- [33] Sinclair VG, Wallston KA. The development and psychometric evaluation of the brief resilient coping scale. *Assessment*. 2004;**11**(1):94-101. DOI: 10.1177/1073191103258144
- [34] Siu O, Hui CH, Phillips DR, Lin L, Wong T, Shi K. A study of resiliency among Chinese health care workers: Capacity to cope with workplace stress. *Journal of Research in Personality*. 2009;**43**(5):770-776. DOI: 10.1016/j.jrp.2009.06.008

- [35] Cohn MA, Fredrickson BL, Brown SL, Mikels JA, Conway AM. Happiness unpacked: Positive emotions increase life satisfaction by building resilience. *Emotion*. 2009;**9**(3): 361-368. DOI: 10.1037/a0015952
- [36] Limonero JT, Tomás-Sábado J, Fernández-Castro J, Gómez-Romero M, Ardilla-Herrero A. Estrategias de afrontamiento resilientes y regulación emocional: Predictores de satisfacción con la vida. *Behavioral Psychology/Psicología Conductual: Revista Internacional Clínica y de la Salud*. 2012;**20**(1):183-196
- [37] Liu Y, Wang Z, Zhou C, Li T. Affect and self-esteem as mediators between trait resilience and psychological adjustment. *Personality and Individual Differences*. 2014;**66**:92-97. DOI: 10.1016/j.paid.2014.03.023
- [38] Ong AD, Bergeman CS, Bisconti TL, Wallace KA. Psychological resilience, positive emotions, and successful adaptation to stress in later life. *Journal of Personality and Social Psychology*. 2006;**91**(4):730-749. DOI: 10.1037/0022-3514.91.4.730
- [39] Block JH, Block J. The role of ego-control and ego resiliency in the organization of behavior. In: Collins WA, editor. *Minnesota Symposium on Child Psychology*. Hillsdale: Erlbaum; 1980. pp. 39-101
- [40] Klohnen EC. Conceptual analysis and measurement of the construct of ego-resiliency. *Journal of Personality and Social Psychology*. 1996;**70**(5):1067-1079. DOI: 10.1037/0022-3514.70.5.1067
- [41] Anthony E. Risk, vulnerability, and resilience: An overview. In: Anthony E, Cohler BJ, editors. *The Invulnerable Child*. New York: Guilford Press; 1987. pp. 3-48
- [42] Masten AS, Reed MJ. Resilience in development. In: Snyder CR, Lopez SJ, editors. *Handbook of Positive Psychology*. New York: Oxford University Press; 2002. pp. 74-88
- [43] Folkman S, Moskowitz J. Positive affect and the other side of coping. *American Psychologist*. 2000;**55**(6):647-654. DOI: 10.1037/0003-066X.55.6.647
- [44] Fredrickson BL, Joiner T. Positive emotions trigger upward spirals toward emotional well-being. *Psychological Science*. 2002;**13**(2):172-175
- [45] Salovey P, Rothman AJ, Detweiler JB, Steward WT. Emotional states and physical health. *American Psychologist*. 2000;**55**(1):110-121. DOI: 10.1037/0003-066X.55.1.110
- [46] Greco C, Morelato G, Ison M. Emociones positivas: Una herramienta psicológica para promover el proceso de resiliencia infantil. *Psicodebate: Psicología, Cultura y Sociedad*. 2006;**7**:81-94
- [47] Ong AD, Bergeman CS, Chow S. Positive emotions as a basic building block of resilience in adulthood. In: Reich JW, Zautra AJ, y Hall, J. editors. *Handbook of Adult Resilience*. New York: Guilford. 2010; p. 81-93
- [48] Swaminath G, Rao BRS. Going beyond psychopathology — Positive emotions and psychological resilience. *Indian Journal of Psychiatry*. 2010;**52**(1):6. DOI: 10.4103/0019-5545.58887
- [49] Doll B, Zucker S, Brehm K. *Resilient Classrooms: Creating Healthy Environments for Learning*. New York: Guilford; 2006

- [50] Martin AJ, Marsh HW. Academic resilience and its psychological and educational correlates: A construct validity approach. *Psychology in the Schools*. 2006;**43**(3):267-281
- [51] Jones G, Lafreniere K. Exploring the role of school engagement in predicting resilience among bahamian youth. *Journal of Black Psychology*. 2014;**40**(1):47-68. DOI: 10.1177/0095798412469230
- [52] Alonso-Tapia J, Nieto C, Ruíz MA. Measuring subjective resilience despite adversity due to family, peers and teachers. *The Spanish Journal of Psychology*. 2013;**16**:1-13. DOI: 10.1017/sjp.2013.33
- [53] Gaixola JG, Lugo SG, Villa EG. Autorregulación, resiliencia y metas educativas: Variables protectoras del rendimiento académico de bachilleres. *Revista Colombiana de Psicología*. 2013;**22**(2):241-252
- [54] Ungar M, Liebenberg L. Ethnocultural factors, resilience, and school engagement. *School Psychology International*. 2013;**34**(5):514-526. DOI: 10.1177/0143034312472761
- [55] Díaz SCP, Peralta C, Giraldo AFR, Ramírez F, Buitrago HC. Factores resilientes asociados al rendimiento académico en estudiantes pertenecientes a la Universidad de Sucre (Colombia). *Psicología desde el Caribe*. 2006;**17**:35-49
- [56] Irvin MJ. Role of student engagement in the resilience of African American adolescents from low-income rural communities. *Psychology in the Schools*. 2012;**49**(2):176-193. DOI: 10.1002/pits.20626
- [57] Skinner EA, Pitzer JR. Developmental dynamics of student engagement, coping, and everyday resilience. In: Christenson SL, Reschly AL, Wylie C, editors. *Handbook of Research on Student Engagement*. New York: Springer Science + Business Media; 2012. pp. 21-44. DOI: 10.1007/978-1-4614-2018-7_2
- [58] Valiente C, Swanson J, y Eisenberg N. Linking students' emotions and academic achievement: When and why emotions matter. *Child Development Perspectives*, 2012;**6**(2): 129-135. DOI: 10.1111/j.1750-8606.2011.00192.x
- [59] Noble T, McGrath H. PROSPER: A new framework for positive education. *Psychology of Well-Being*. 2015;**5**(1):2
- [60] Huebner ES, Hills KJ. Assessment of subjective well-being in children and adolescents. In: Saklofske DH, Reynolds CR, Schwean VL, editors. *Oxford Handbook of Child Psychological Assessment*. New York: Oxford University Press; 2013. pp. 773-787
- [61] Kern M, Waters LE, Adler A, White M. A multidimensional approach to measuring well-being in students: Application of the PERMA framework. *The Journal of Positive Psychology*. 2015;**10**(3):262-271. DOI: 10.1080/17439760.2014.936962
- [62] Heffner AL, Antaramian SP. The role of life satisfaction in predicting student engagement and achievement. *Journal of Happiness Studies*. 2016;**17**(4):1681-1701
- [63] Lewis AD, Huebner E, Malone PS, Valois RF. Life satisfaction and student engagement in adolescents. *Journal of Youth and Adolescence*. 2011;**40**(3):249-262. DOI: 10.1007/s10964-010-9517-6

- [64] Crede J, Wirthwein L, McElvany N, Steinmayr R. Adolescents' academic achievement and life satisfaction: The role of parents' education. *Frontiers in Psychology*. 2015;**6**:1-8. DOI: 10.3389/fpsyg.2015.00052
- [65] Quiroga CV, Janosz M, Bisset S, Morin AJ. Early adolescent depression symptoms and school dropout: Mediating processes involving self-reported academic competence and achievement. *Journal of Educational Psychology*. 2013;**105**(2):552
- [66] Ramos-Díaz E, Rodríguez-Fernández A, Revuelta L, Axpe I. El rol mediador de la implicación escolar sobre el apoyo del profesorado y la satisfacción con la vida. *European Journal of Investigation and Education*. 2016;**6**(23):151-165
- [67] Campbell-Sills L, Stein MB. Psychometric analysis and refinement of the Connor-Davidson resilience scale (CD-RISC): Validation of a 10-item measure of resilience. *Journal of Traumatic Stress*. 2007;**20**(6):1019-1028. DOI: 10.1002/jts.20271
- [68] Diener E, Emmons R, Larsen RJ, Griffin S. The satisfaction with life scale. *Journal of Personality Assessment*. 1985;**49**:71-75
- [69] Rodríguez-Fernández, A, Ramos-Díaz, E, Fernández-Zabala, A, Goñi, E, Esnaola, I, & Goñi, A. Contextual and psychological variables in a descriptive model of subjective well-being and school engagement. *International Journal of Clinical and Health Psychology*, 2016;**16**(2);166-174. DOI: <http://dx.doi.org/10.1016/j.ijchp.2016.01.003>
- [70] Fredricks JA, Blumenfeld PC, Friedel J, Paris A. School engagement. In: Moore KA, Lippman L, editors. *Conceptualizing and Measuring Indicators of Positive Development: What Do Children Need to Flourish*. New York: Kluwer Academic/Plenum Press; 2005. pp. 305-321
- [71] Ramos-Díaz E, Rodríguez-Fernández A, Revuelta L. Validation of the Spanish version of the school Engagement measure (SEM). *The Spanish Journal of Psychology*. 2016;**19**: 37-42. DOI: 10.1017/sjp.2016.94
- [72] de la Rubia JCM, Sosa JCS, González MEV. Desarrollo de una escala multidimensional breve de ajuste escolar. *REMA Revista electrónica de metodología aplicada*. 2010;**15**(1):1-11
- [73] Ramos E. Resiliencia y ajuste psicosocial en la adolescencia [Thesis]. Leioa: University of the Basque Country; 2015