Academic Expectations Questionnaire: A Proposal for a Short Version

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Abstract

Academic expectations play a significant role in the quality of student adaptation and academic success. Previous research suggests that expectations are a multidimensional construct, making it crucial to test the measures used for this important characteristic. Because assessment of student adaptation to higher education comprises a multitude of personal and contextual variables, including expectations, shortened versions of assessment instruments are critical. In this article, confirmatory factor analysis was used to obtain a short version of the Academic Perceptions Questionnaire–Expectations (APQ-E). Participants were 3,017 first-year Portuguese college students. The results support the use of a shorter version of 24 items, distributed over six dimensions, with good reliability and validity.

Keywords

expectations, higher education, first-year students, academic adjustment, assessment

Introduction

In explaining student academic adaptation to higher education (HE), research in the field has highlighted a wide range of personal and institutional variables among which expectations play a significant role (Balloo, Pauli, & Worrell, 2017; Fernández, Araújo, Vacas, Almeida, & Gonzalez, 2017; Pascarella & Terenzini, 2005). In combining cognition and motivation, academic expectations reflect student aspirations or what they intend to achieve in attending HE, and how they can overcome the challenges posed by the HE experience (Krammer, Sommer, & Arendasy, 2016; Kuh, Gonyea, & Williams, 2005; Pascarella & Terenzini, 2005). For Byrne et al. (2012), these "expectations reflect an individual's anticipation of future events and conditions" (p. 136) and they are associated with motivation for learning, academic success, and general academic satisfaction.

Students tend to be more satisfied and to persevere to graduate when their expectations and the academic reality they encounter are matched (Braxton, Vesper, & Hossler, 1995; Pascarella & Terenzini, 2005; Tinto, 1993). Positive and realistic expectations reinforce the use of coping strategies when faced with initial adaptation difficulties (Krammer et al., 2016; Nes, Evans, & Segerstrom, 2009; Neuville, Frenay, & Bourgeois, 2007). When the initial expectations of students are too high or unrealistic, they are more likely to fail to realize them. In this situation, students experience frustration and reduce their investment in acquiring new skills to deal with the challenges of HE (Byrne & Flood,

2005; Jackson, Pancer, & Pratt, 2000; Kreig, 2013). As students enter college with different expectations (Schilling & Schilling, 1999), identifying what these expectations are allows teachers to orient their classes to meet student learning needs (Miller, Kuh, Paine, & Associates, 2005) such as helping them to become "intentional learners" (McCarthy & Kuh, 2006). This attention is more and more important when students enter university with different academic competencies and motivations, as well as different vocational or career projects, or when they are first-generation students with a lack of sufficient and objective information concerning campus life (Braxton et al., 1995; Briggs, Clark, & Hall, 2012). These students are often somewhat idealistic in terms of what they can accomplish and frustration can emerge in the first weeks of college life (Credé & Niehorster, 2012). The gap between initial expectations and the actual experience can lead to dissatisfaction, disengagement, and poor performance in academic life (Jackson et al., 2000).

Research on academic expectations points to its multidimensionality, which is in line with the multiple experiences that students can have and develop in HE (Borghi, Mainardes, & Silva, 2016; Diniz et al., 2018; Fernández

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et al., 2017; Kuh et al., 2005; Marinho-Araujo, Fleith, Almeida, Bisinoto, & Rabelo, 2015; Pascarella & Terenzini, 2005). Research in this area suggests a heterogeneous set of academic expectations, namely, in terms of employability after training, the quality of the infrastructure of the institution, the quality of teaching and the teachers, opportunities for international mobility, opportunities for personal growth and development, social interactions, and interpersonal relationships (Baker, McNeil, & Siryk, 1985; Borghi et al., 2016; Mainardes, Raposo, & Alves, 2012).

The multidimensionality of academic expectations has been highlighted through several differential studies focusing on subgroups of students. For example, students from disadvantaged social groups or students who are the first-generation to participate in HE tend to have lower levels of expectations in terms of learning and achievement (Menon, Saiti, & Socratous, 2007; Thorpe, Snell, Hoskins, & Bryant, 2007). On the contrary, when considering gender, a number of studies have highlighted differences in expectations when comparing men and women. This research shows that women seem to value and invest more in interpersonal relationships and in learning activities, while men are more concerned with their professional careers and employment after graduation (Sax & Harper, 2007; Wells, Seifert, & Saunders, 2013). At the same time, women are more likely to be involved in community and volunteer work; men invest more in tasks involving leadership and competitiveness and are more available for mobility programs (Sax & Harper, 2007; Zeldin, Britner, & Pajares, 2008).

In the specific case of Portugal, with college entrance based on a *numerus clausus* system, students enroll for a degree and an institution by means of their grade-point average achievement, combining high school marks with national exams and not as result of any vocational option or preference. This has been backed up in recent years by Government research which found that almost 50% of students in Portugal are not entering college in the degree program of their choice (Fonseca, Dias, Sá, & Amaral, 2014). These students are probably entering HE with lowered or inadequate academic expectations and, as a result, it is easier to understand these difficulties with regard to engaging in academic activities and being more confident in attaining a degree, particularly in the first year. The evaluation of expectations would thus be important in allowing institutions and teachers to propose actions promoting an adjustment of student expectations and to create the optimum conditions for their success in HE (Borghi et al., 2016; Holmegaard, Madsen, & Ulriksen, 2016).

In light of this reasoning, the "Academic Perceptions Questionnaire–Expectations" (APQ-E) was developed and validated for Portuguese and Spanish students (Deaño et al., 2015; Gil et al., 2013). This scale takes into account seven dimensions or types of expectations: Training for Employment; Personal and Social Development; Student Mobility; Political Engagement and Citizenship; Social Pressure; Quality of Education; and Social Interaction. Even though adequate reliability and validity have been observed in Spanish and Portuguese samples (Deaño et al., 2015; Diniz et al., 2018), the students have commented negatively with regard to the extension of the measures and the presence of items with very similar contents.

In this article, the multidimensionality of expectations was tested with confirmatory factor analysis to evaluate the possibility of reducing the number of items in each dimension. This reduction is required to facilitate the use of this scale in future research, when other personal variables must be included in the evaluation protocol to study academic adaptation and success. At the same time, it is important to establish a similar number of items for each dimension in the final version of APQ-E. Based on previous studies with this questionnaire, we expected to replicate a structure with seven dimensions in the short version and to achieve identical or stronger reliability for each dimension while avoiding redundancy in the contents of the items.

Method

Participants

The participants were 3,017 first-year students in two Portuguese HE institutions. To assure a greater degree of heterogeneity in the sample, a public institution in the north and a private institution in the south of Portugal were chosen. In the private institution, students were from the social sciences and humanities, and in the public institution, students were from a wide range of scientific areas, including those related to technology. In both universities, most of the students were female (56.5%) and aged between 16 and 54 ($M = 19.48$, $SD = 4.52$). Most students reported that they were in the degree of their choice (65.5%) and also their first choice of institution (77.1%). A large majority (88.8%) had no job, either part-time or full-time, and 36.8% mentioned the necessity of leaving their parental homes to attend HE. Finally, most students tended to be first-generation students in HE, with only 21.6% of their parents having HE diplomas (27.3% in the case of mothers). A small percentage (7.1%) of incomplete questionnaires were removed prior to the data analysis.

Instrument and Procedure

Student academic expectations were measured using the APQ-E (Deaño et al., 2015). This instrument comprises 42 items organized into seven subscales: Training for Employment (TFE, eight items; e.g., "Obtain training to achieve a good job"); Personal and Social Development (PSD, eight items; e.g., "Improve my identity, autonomy and self-confidence"); Student Mobility (SM, eight items; e.g., "Participate in student exchange programs"); Political Engagement and Citizenship (PEC, six items; e.g., "Contribute to improving the world and society"); Social

Table 1. Goodness-of-Fit Indexes for the Models Tested.

	χ^2	*df*	*p*	TLI	CFI	RMSEA [90% CI]
Initial model	14051.6	798	<.001	.88	.89	.074 [.073, .075]
Reduced Model Sample 1	1449.7	237	<.001	.96	.97	.058 [.055, .061]
Reduced Model Sample 2	1411.9	237	<.001	.96	.97	.057 [.055, .060]
Total sample	2642.9	237	<.001	.96	.97	.058 [.056, .060]
Hierarchical model	3270.3	246	<.001	.95	.96	.064 [.062, .066]

Note. df = degrees of freedom; TLI = Tucker–Lewis index; CFI = comparative fit index; RMSEA = root mean square error of approximation; CI = confidence interval.

Pressure (SP, four items; e.g., "Meet my family's expectations"); Quality of Education (QE, four items; e.g., "Participate in debates or scientific conferences"); and Social Interaction (SI, four items; e.g., "Enjoy living with others and having fun"). Each item elicited a response on a 6-point Likert-type scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). Adequate reliability and validity in Spanish and Portuguese samples were obtained (Deaño et al., 2015; Diniz et al., 2018).

The procedures for data collection and the criterion for choosing students were the same in both institutions. Data were collected at the point of entrance into university, and only freshman students were considered. APQ-E integrated a protocol to evaluate the quality of adaptation and adjustment first-year student entrants, including sociodemographic data, past academic background, academic expectations, and expectation of difficulties that students anticipated in their academic adjustment. Student participation was voluntary, and informed consent was given by all participants.

Data Analysis

Because the items measurement scale was ordinal, the factorial structure of the APQ-E was evaluated using a confirmatory factor analysis (CFA) on the items' polychoric correlation matrix using the WLSMV (weighted least squares means and variance adjusted) estimator (Finney, DiStefano, & Kopp, 2016) implemented in Mplus (v. 7.4., Muthén & Muthén, 1998-2016, CA). Goodness of fit was evaluated according to the comparative fit index (CFI), the Tucker–Lewis index (TLI), and the root mean square error of approximation (RMSEA). CFI and TLI values higher than .95 and RMSEA values lower than .06 were considered indicative of a good structural fit (Schmitt, 2011). Tests for the $\Delta\chi^2$ between nested models calculated with the WLSMV estimator were undertaken following Satorra and Bentler (2010).

In addition to Cronbach's alpha, composite reliability as proposed by Geldhof, Preacher, and Zyphur (2014) was used. Convergent and discriminant validity were examined using the average variance extracted (AVE) and the factor correlations as suggested by Fornell and Larcker (1981) and Hair, Black, Babin, and Anderson (2014).

Results

The results of the CFA carried out on the 42 items showed a poor fit with the data (Table 1) and, as a consequence, some of the original items were dropped based on conceptual, practical, and statistical (low factor loadings) grounds. Thus, two items which showed the lowest factor loadings were removed in each dimension, ensuring at the same time that the content of the removed item was assessed by the remaining items.

The dimension Quality of Education was also removed because the Modification Indices suggested cross-loadings with several items in other factors. This factor also presented high correlations (above .80) with several other dimensions, thus lacking discriminant validity. Figure 1 contains the six dimensions retained, as well as the four items included per dimension, supported in successive analyses.

To respecify the initial model, the sample was randomly split in two. The first half (Sample 1) was used to respecify the model and the second (Sample 2) was used to validate the resulting model. After removing 18 items, the shortened model showed an adequate fit, both according to TLI and CFI, and a RMSEA value close to .05, in both samples (Table 1). The factor loadings were all higher than .65 in the corresponding latent construct. As a consequence, the AVE is higher than .50, which is indicative of good convergent validity (Fornell & Larcker, 1981; Hair et al., 2014). To assess discriminant validity, the AVE of each factor with the squared correlation between each pair of factors was compared. Evidence of discriminant validity was accepted when the AVE of two given factors was higher than the squared correlation between them (Fornell & Larcker, 1981; Hair et al., 2014). The results in Table 2 show that most of the constructs meet the criteria of the AVE factor greater than the squared correlation between them. However, the pairs, Personal and Social Development–Political Engagement and Citizenship (PSD-PEC) and Personal and Social Development–Training for Employment (PSD-TFE) showed lower AVE than the squared correlation between the latent variables. Thus, three alternative models were tested: two in which those factors were merged into a single factor (PSD-TFE and PSD-PEC) and a third merging the three dimensions into a single factor (PSD-TFE-PEC). The differences in
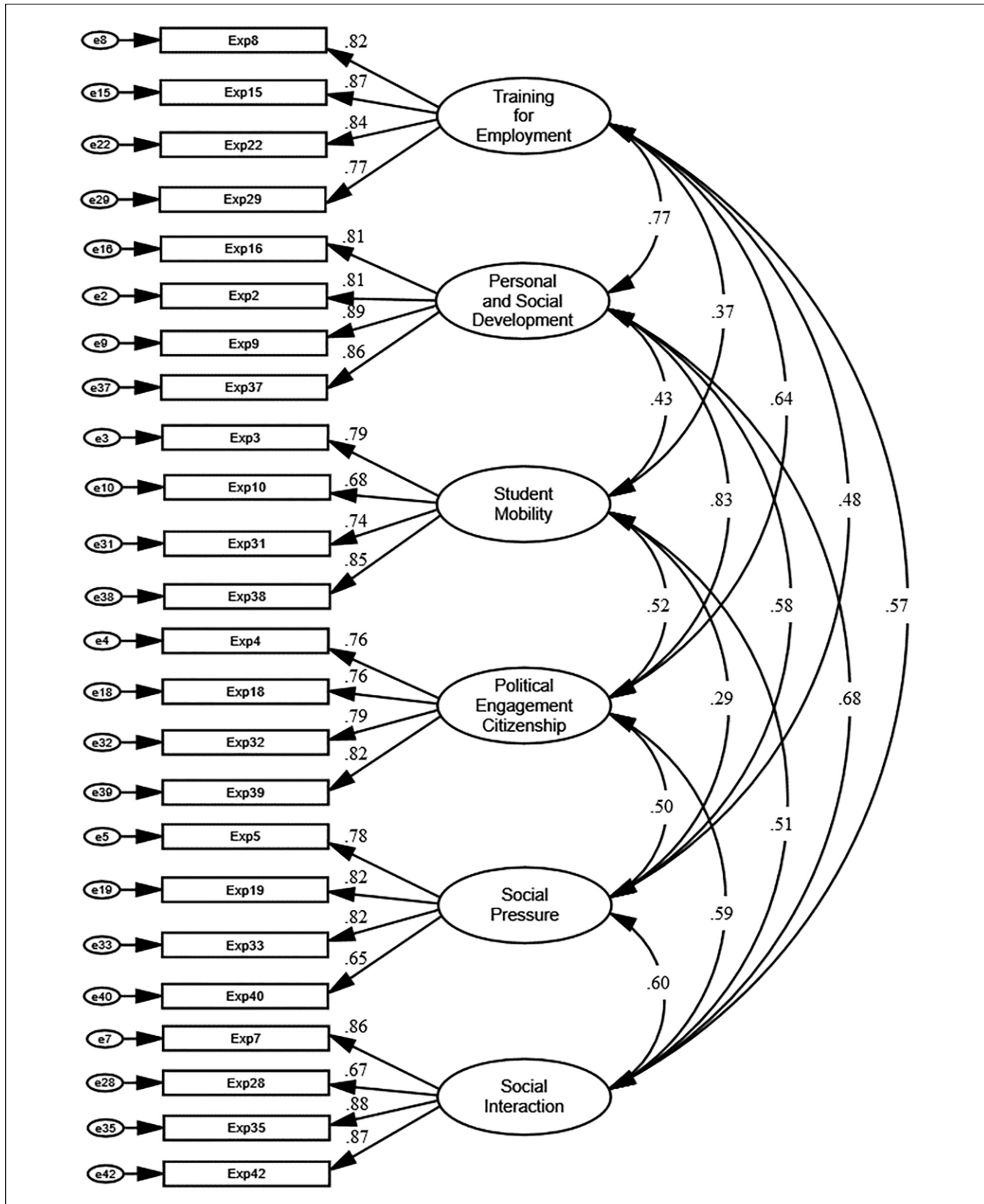
Figure 1. Academic Expectations Questionnaire—dimensions retained.

Table 2. Reliability Measures, Average Variance Extracted, and Correlation Matrix Between the Dimensions of the Expectations Scale.

| | Cronbach's alpha | | Composite reliability | | | | | | | | |
	Gil et al. (2013)	Present study	Diniz et al. (2018)	Present study	AVE	TFE	PSD	SM	PEC	SP	SI
TFE	.89 (8)	.81 (4)	.95/.92 (8)	.89 (4)	.679	—	.591	.138	.408	.231	.319
PSD	.87 (8)	.78 (4)	.91/.89 (8)	.85 (4)	.585	.769	—	.184	.692	.340	.465
SM	.85 (8)	.88 (4)	.91/.92 (8)	.91 (4)	.711	.372	.429	—	.267	.084	.262
PEC	.85 (6)	.81 (4)	.88/.87 (6)	.86 (4)	.612	.639	.832	.517	—	.254	.346
SP	.79 (6)	.80 (4)	.79/.80 (4)	.85 (4)	.590	.481	.583	.289	.504	—	.359
SI	.75 (6)	.85 (4)	.80/.72 (4)	.89 (4)	.676	.565	.682	.512	.588	.599	—

Note. The number of items for each dimension are in parentheses. In the Diniz et al. (2018) study the first composite reliability scores are for men and the second for woman. Values below the diagonal are correlations among constructs, and values above diagonal are squared correlations. All correlation values are statistically significant at $p < .001$. AVE = average variance extracted; TFE = Training for Employment; PSD = Personal and Social Development; SM = Student Mobility; PEC = Political Engagement and Citizenship; SP = Social Pressure; SI = Social Interaction.

the chi-square results between each of these models and the original six factor model are all statistically significant, $\Delta\chi^2_{PSD\text{-}TFE}(5) = 437.8$, $p < .001$; $\Delta\chi^2_{PSD\text{-}PEC}(5) = 395.2$, $p < .001$; $\Delta\chi2_{PSD\text{-}TFE\text{-}PEC}(5) = 876.2$, $p < .001$. As an alternative solution to the high correlations between the factors, a hierarchical model (Figure 2) positing a high order factor called Global Expectations was tested. This high order factor is a measure of the expectations students have and can be expressed in terms of more positive or negative expectations irrespective of the kind of expectation. Taking into account that a hierarchical model can show, at best, goodness-of-fit indexes as good as the multidimensional correlated model (Marsh & Hocevar, 1985), the outcome showed that the hierarchical model resulted in a very acceptable goodness-of-fit indexes (Table 1).

Reliability analyses showed very acceptable values both for Cronbach's alpha and composite reliability (Table 2). A comparison with the reliability of previous studies using the longer version of the scale shows that the reliability scores are identical or better when the number of items used are the same (SP and SI) and remains at very acceptable levels when the numbers of items per dimension are reduced (TFE, PSD, SM, and PEC).

Table 3 presents the descriptive statistics of the scales. Considering the nature of the construct (expectations) and the point in time when it was evaluated (before the beginning of the academic year), the distribution of the results shows a negative skewness. Nevertheless, for almost all dimensions, the results range from the lowest point of the scale to the highest, the exceptions being the dimensions Training for Employment and Political Engagement and Citizenship, despite the minimum value presented being close to the lower end of the scale.

Discussion

The success of transition and adaptation to HE is assumed as an important factor in promoting student involvement and academic success (Balloo et al., 2017; Fernández et al., 2017; Pascarella & Terenzini, 2005). Students who have experienced more difficulties in the adaptation process have higher failure rates and are more likely to drop out, particularly in the first year (Briggs et al., 2012; Kitsantas, Winsler, & Huie, 2008).

Positive expectations are associated with the investment of students in overcoming challenges posed by new circumstances in the teaching-learning process, living autonomously or having new relationships with peers (Krammer et al., 2016; Kuh et al., 2005; Pascarella & Terenzini, 2005). There is often a gap between the initial expectation and the reality experienced by the students, because their initial expectations are too high or unrealistic. This disjuncture may prejudice the adaptation process, with a potential negative impact on student satisfaction and achievement (Borghi et al., 2016; Jackson et al., 2000). To help students be successful and persevere in HE, it is important that institutions and teachers take into consideration the student expectations in their policies and practices.

In utilizing a multidimensional questionnaire of academic expectations that can be used in Portugal, Spain, and Brazil, this article analyzes factorial structure, specifically, if there is a better goodness-of-fit model when academic expectation dimensions are considered individually or when they are merged in a second-order factor. At the same time, it was possible to verify if some items could be eliminated due to content redundancy, allowing as much as possible for a smaller scale, as well as reducing the student time and effort (Appendix). The short version could also be helpful in research with a large number of students and when the assessment protocol includes other variables and scales.

The results of the CFA showed that the items of the dimension of Quality of Education were distributed by other dimensions of the questionnaire as a result of their specific content. Some are close to the Personal and Social Development dimension (e.g., participation in debates or scientific conferences), others to the Social Pressure dimension (e.g, achievement of good grades in order to enhance my curriculum). It is
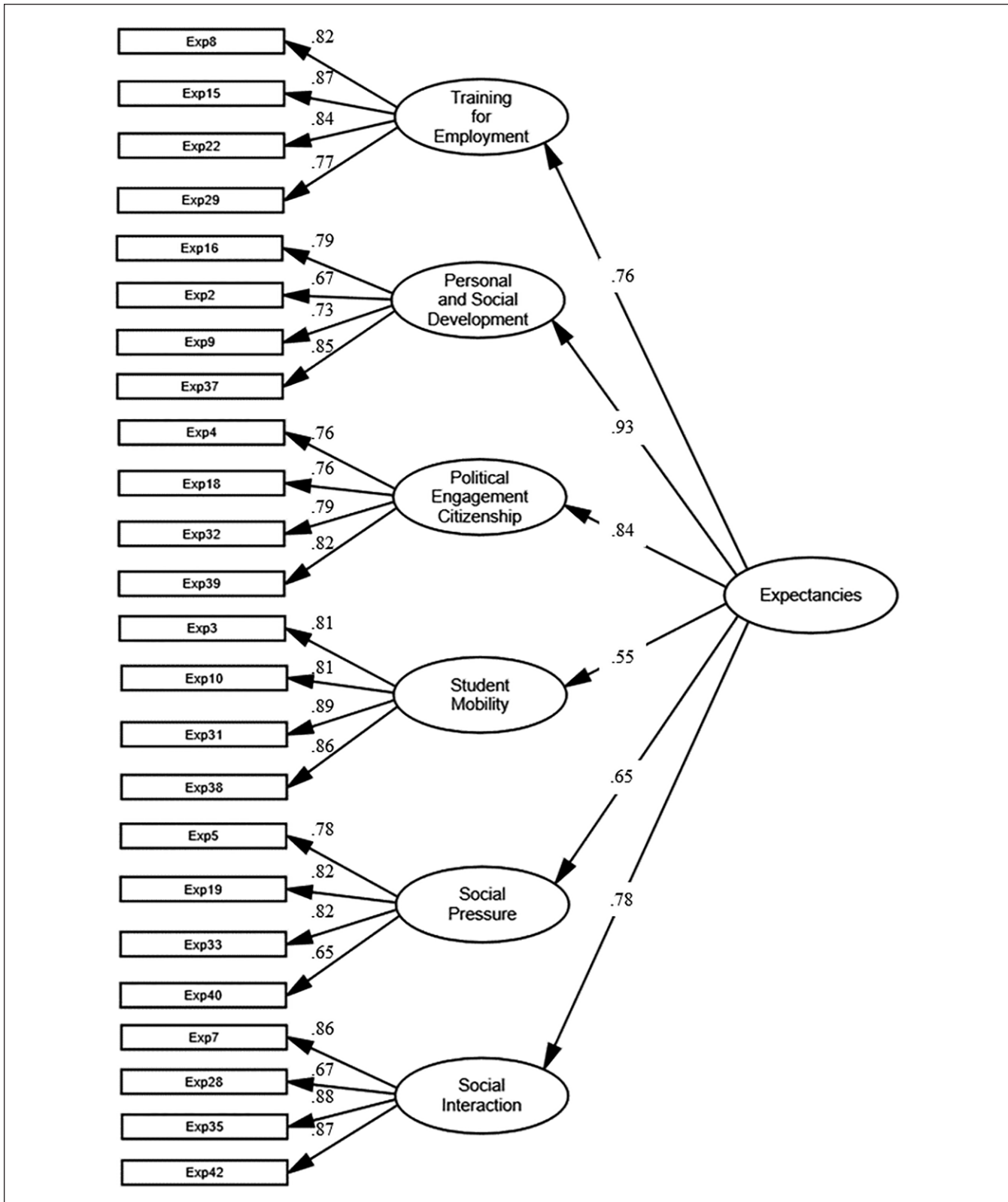
Figure 2. Academic Expectations Questionnaire—hierarchical model.

possible that the formulation and implementation of the expectations in the different domains identified here

necessarily derive from Quality of Education. Therefore, maintaining this dimension would reinforce the correlations

Table 3. Descriptive Statistics of Final Six Dimensions of the Expectations Scale (*N* = 3,017).

	M	Median	*SD*	Skewness	Kurtosis	*SE*	Minimum	Maximum
TFE	5.553	5.75	0.539	−1.698	4.622	0.010	1.25	6.00
PSD	5.337	5.50	0.642	−1.291	2.882	0.012	1.00	6.00
SM	4.554	4.75	1.082	−0.814	0.521	0.020	1.00	6.00
PEC	5.147	5.25	0.712	−0.824	0.804	0.013	1.25	6.00
SP	4.426	4.50	1.120	−0.727	0.297	0.020	1.00	6.00
SI	4.854	5.00	0.912	−1.100	1.613	0.017	1.00	6.00

Note. TFE = Training for Employment; PSD = Personal and Social Development; SM = Student Mobility; PEC = Political Engagement and Citizenship; SP = Social Pressure; SI = Social Interaction.

between the remaining six dimensions and diminish their specificity, contrary to the objectives of multidimensional evaluation of academic expectations with this questionnaire. In view of these data, we opted for the removal of items from this dimension, reducing the dimensions evaluated from seven to six. On the contrary, to reduce the number of items in the questionnaire, we chose four items per dimension with better loading in the specific factor and the items with content which provided complementary information.

Testing the initial model structure with seven dimensions resulted in the model having an inadequate fit. Better indices were achieved in testing a model with six dimensions, following the removal of Quality of Education items. However, the moderate or high correlations between the six dimensions suggested the testing of an alternative model with a second-order factor (range of correlations coefficients was .29 between SM and SP dimensions and .83 between PSD and PEC). This second-order factor model (Model 2) presented a good model fit and suggests the possibility of obtaining a general index of academic expectations. This index reflects positive or negative student experiences, beliefs, and aspirations in terms of their participation in HE, and these can also be differentiated by the six domains identified as first-order factors. The results of this second-order model show different weights of the first-order factors, and these differences may be related to their relevance in the academic experiences of the first-year students. As an example, the lower loading of the Student International Mobility dimension (.55) may translate into lower relevance in first-year students when they enter HE in contrast with PSD (.93) which is assumed as a general objective of HE entrance (Fearon, Nachmias, McLaughlin, & Jackson, 2018).

The emergence of a second-order factor was not foreseen by the authors in the original version of the questionnaire and could signal a smaller differentiation in the student perceptions of the possibilities that HE allows in different areas of their personal, social life, and future professional development. In further studies, taking samples of students from other grade years will be interesting to test whether the presence of this second-order factor persists in the face of the stronger academic experiences, as well as whether expectations depend on the scientific nature of their degrees and their academic pathways.

Finally, it would be decisive to test the academic relevance of this construct by, for example, analyzing its relationship with other indicators of academic adaptation and above all, with continued application toward a course and academic performance in the first year. These analyses, considering general and specific factors, enable the identification of students with scores in expectation that are higher or lower (social, academic, institutional) and to identify preventive practices to support these students. Considering the diversity of HE entrant students, in terms of objectives and motivations to graduate, the questionnaire results allow for the implementation of preventative programs that enable students to reach their academic expectations and promote opportunities for development. When the research shows that many students start HE with high and unrealistic expectations (Byrne & Flood, 2005; Krammer et al., 2016), the use of this short version in large-scale studies facilitates the identification of those students and can guide the implementation of curricular or extracurricular programs to raise awareness of a far more accurate academic reality in the first year of the university.

In summary, the short version of the APQ-E was obtained with six of the initial seven dimensions (Deaño et al., 2015; Diniz et al., 2018). This shortened version of the APQ-E showed adequate reliability and validity, proving to be an adequate instrument to assess student expectations when entering the HE system. These expectations can be considered as a whole by informing them of a global level of academic expectations and also differentiated according to specific domains of their accomplishment. In addition, reducing the number of items from 42 to 24, with four items per dimension, allows for it to be included in evaluation protocols that take into consideration a greater number of personal and contextual variables.

Appendix

List of Items in the Final Version of the APQ-E

Personal and social development

2. Take the academic opportunities to improve my identity, autonomy, self-confidence, etc.
9. Develop my personality.
16. Gain confidence in my potentialities.
37. Acquire skills to be a more responsible and autonomous person.

Student international mobility

3. Participate in university student mobility programs (Erasmus, Leonardo, etc.).
10. Arrange internship in another country.
31. Participate in student mobility, spending some time in the course in another country.
38. Be willing to take internships in another country to obtain an internationally recognized qualification.

Political engagement and citizenship

4. Understand how I can contribute to improving the world and society.
18. Take a critical view of the world and think about how to transform it.
32. Becoming a committed citizen toward the problems of contemporary society.
39. Contribute to the improvement of the human condition or the well-being of people.

Social pressure

5. Meet the expectations of my family.
19. Don't disappoint family or friends in terms of my academic achievement.
33. Fulfill the desire of those close to me who have encouraged my higher education.
40. Achieve a level of education similar or greater than that achieved by my parents (or older siblings).

Social interaction

7. Have moments of socialization and fun.
28. Participate regularly in parties with colleagues.
35. Have a group of friends with whom I can relax and socialize outside of class.
42. Live and socialize with a new group of friends.

Training for employment

8. Have better career opportunities in the labor market.
15. Get training to have a good job in the future.
22. Empower me to succeed professionally in the future.
29. Ensure a satisfactory professional career after the course.

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