

## Predictors of students' adjustment during transition to university in Spain

María Fernanda Páramo Fernández<sup>1</sup>, Alexandra M. Araújo<sup>2</sup>, Carolina Tinajero Vacas<sup>1</sup>, Leandro S. Almeida<sup>2</sup>  
and María Soledad Rodríguez González<sup>1</sup>

<sup>1</sup> Universidad de Santiago de Compostela and <sup>2</sup> Universidade do Minho

### Abstract

**Background:** Adjustment to university is a major life transition that not all emerging adults manage successfully. The Student University Adjustment Questionnaire is the instrument most commonly used to evaluate this multidimensional construct. Research in Spain on the predisposing factors for successful adjustment to university in emerging adults is scarce relative to the large number of studies carried out in North America. The objective of the present study was to analyze the association between students' gender, family background, pre-university achievement and adjustment to university. **Method:** Participants were 300 Spanish first-year students (198 women and 102 men) of mean age 18.02 years. **Results:** Pre-university achievement was the only significant predictor of academic, social and institutional adjustment. Gender directly affected personal-emotional adjustment and indirectly affected academic adjustment mediated by entry grade. **Conclusions:** Students' entry characteristics predict adjustment to university in the first year. These findings have important theoretical and practical implications.

**Keywords:** First-year university students, SACQ, gender, family background, pre-university achievement.

### Resumen

**Predictores del ajuste de los estudiantes durante la transición a la Universidad en España. Antecedentes:** la adaptación a la universidad es una de las principales transiciones vitales que no todos los adultos emergentes afrontan con éxito. El Cuestionario de Adaptación del Estudiante a la Universidad es el instrumento más empleado para evaluar este constructo multidimensional. En España no existen investigaciones sobre los factores que predisponen a los adultos emergentes a una adaptación exitosa a la universidad respecto al número de investigaciones llevadas a cabo con muestras norteamericanas. El objetivo de este estudio es analizar la relación entre el género, el background familiar, la nota de acceso y el ajuste a la universidad. **Método:** participaron 300 estudiantes españoles de primer año (198 mujeres y 102 hombres) con un promedio de edad de 18,02 años. **Resultados:** la nota de acceso fue el único predictor significativo del ajuste académico, social e institucional. El género influye de una manera directa sobre el ajuste personal-emocional e indirecta sobre el ajuste académico, mediado por la nota de acceso. **Conclusiones:** las características de entrada del estudiante predicen su adaptación en el primer año de universidad. Estos resultados tienen importantes implicaciones teóricas y prácticas.

**Palabras clave:** universitarios de primer año, SACQ, género, background familiar, nota de acceso.

Attending university is now a common expectation for people from diverse cultural and social backgrounds (Moreno, Rodríguez, Crespo, Juliá, & Fernández-Pacheco, 2013). Most Spanish students who access Higher Education (HE) are aged 18 to 25 years old, financially dependent on their parents and free of adult life obligations such as full-time employment, mortgages, marriage and children. According to Arnett (2000), under these conditions students are neither adolescents nor adults, but somewhere in between, at a stage called *emerging adulthood*. In Spain, emerging adults construct their identity as part of the

family group, prior to the acquisition of independence or personal autonomy. This distinctive feature, characteristic of Mediterranean countries (Fierro & Moreno, 2007), is crucial for understanding the influence of the family context in Spanish students from a comparative perspective.

The university experience requires emerging adults to face a particularly important challenge: to combine the exploration and lack of definition that are characteristic of adolescence with characteristics demanded of independent adults in an unknown and highly competitive environment. However, not all emerging adults are able to master these developmental tasks and enjoy a satisfactory experience in HE. As a result, many students experience problems in the transition to university, including depression, loneliness, academic difficulties and substance abuse, which can lead to dissatisfaction, disengagement, lower achievement and attrition (e.g., Caamaño-Isorna, Corral, Parada, & Cadaveira, 2008; Friedlander, Reid, Shupak, & Cribbie, 2007).

According to the Education at a Glance report (Organisation for Economic Co-operation and Development: OECD, 2014), more than 50% of students in Spain fail to complete college, and much of this attrition (approximately 26%) occurs in the first year. In this respect, Spain occupies one of the lowest positions within the European Union.

The documented difficulties that students experience during the transition to college, combined with the changing needs of students, have brought increased attention to adjustment of first-year university students and interest in improving graduation rates. Student attrition, low academic yield and excessive amounts of time invested in degree studies are common problems in all European Union countries (OECD, 2014).

Adjustment to university is a complex, multifaceted construct that involves an array of demands that vary in type and degree and require a variety of coping strategies involving many factors other than academic performance (Baker & Siryk, 1984). As suggested by the findings of a meta-analysis conducted by Credé and Niehorster (2012), adjustment seems crucial to the ability to perform well academically, to obtain a degree, and to view the university experience as positive. The Student Adaptation to College Questionnaire (SACQ) (Baker & Siryk, 1984) was developed as a self-report measure that describes the adjustment in terms of efforts made by the student to cope with the academic, social, personal-emotional and environmental challenges involved in attending university.

The SACQ has been demonstrated to capture early signs of problems in adjustment to university and to predict persistence and academic achievement (Abdullah, Elias, Mahyuddin, & Uli, 2009; Bernier, Larose, Boivin, & Soucy, 2004; Ostrove & Long, 2007; Padgett, Johnson, & Pascarella, 2012; Wintre et al., 2011; Yazedjian, Toews, & Navarro, 2009). Most studies involving the SACQ have been conducted with samples of North-American college students, which limits the extent to which the results can be applied to other student populations. Some studies have also been conducted with Dutch-speaking Belgian students (Beyers & Goossens, 2002), Portuguese students (Rocha & Matos, 2008), college students in the People's Republic of China (Tao, Dong, Pratt, Hunsberger, & Pancer, 2000), Chinese exchange students in Japan (Jou & Fukada, 1995), Malaysia (Abdullah et al., 2009) and France (Carayon & Gilles, 2005), and more recently with Northern Spanish students (Rodríguez, Tinajero, Guisande, & Páramo, 2012). The findings of these studies reinforce the potential usefulness of the questionnaire as an internationally relevant measure of adjustment to university.

Successful adaptation is brought about by a complex process of interaction between the characteristics of the student on entry to HE and factors acting during the student's time at university. Theories about students' persistence and success at university have been consistent in stressing the importance of students' entry characteristics as shaping the quality of students' experiences and persistence at university (Astin, 1984; Bean & Eaton, 2000). Personal characteristics (e.g. gender), family background (e.g. parental educational level), and academic ability (e.g. pre-entry academic achievement) are major influencing factors in the first year at university and may affect the quality of students' transition to higher education in two ways: as distinctive features that influence the initial commitment with the institution and as perceptions or expectations about the possibility of completing their undergraduate programmes (Tinto, 1993). Moreover, adaptation to

university is not an unvarying experience, but rather a multiplicity of complex experiences in which the entry characteristics of the student interact with process variables and institutional factors, which must be analysed in the cultural context within which they are produced. Research findings may therefore differ in relation to the effects and the meaning of the predictors considered. The aim of this study was therefore to investigate adjustment to university, by using the SACQ, in a cohort of first-year Spanish students. The specific purpose of the study was to examine the relationships between students' gender, family background, pre-university achievement and academic, social, personal-emotional and institutional adjustment to university.

## Method

### Participants

The participants in the study were 300 first-year students attending the University of Santiago de Compostela, a public university in Galicia. The students were drawn at random from 16 European Higher Education Area (EHEA) undergraduate degree courses within the five areas of study offered at the University (Sciences, Social Sciences and Law, Humanities, Health Sciences and Engineering). All of the students were selected from a larger sample, by applying the following academic and family-related criteria: first-time, first-year attendance at university undertaking full-time courses (60 credits), age less than or equal to 21 years, undertaking courses that were first or second choices, single and not employed (i.e. they were economically dependent on their parents). These criteria were applied in order to select a socially and culturally homogeneous sample of first-year emerging adult students.

The final sample included 198 females and 102 males, which is consistent with the gender distribution of students attending the university. The average age of the participants was 18.02 years ( $SD=0.52$ ). Most students (91%) were from intact families, and 75.7% were relocated from their parents' house. The students' parents were mostly both employed (62.3%) with a combined middle-class income (79.7%). Both parents were university graduates in only 15.7% of cases, and both parents had an elementary level education in 23.7% of cases.

### Instruments

Adjustment to university was assessed with the Spanish version (Rodríguez et al., 2012) of the *Student Adaptation to College Questionnaire* (SACQ; Baker & Siryk, 1984). The measure examines university adjustment in four dimensions: academic adjustment, social adjustment, personal-emotional adjustment and institutional attachment. Academic adjustment includes how well students deal with educational demands, such as motivation to complete academic requirement, academic effort and satisfaction with the academic environment. Social adjustment measures the student's success in coping with the interpersonal-societal demands inherent in college life. Personal-emotional adjustment involves the student's psychological state and the extent to which he or she is experiencing general psychological distress. Institutional attachment describes the student's satisfaction with the college experience in general and the quality of the relationship between the student and the institution.

Participants rated the 67 items of the Spanish version of the SACQ on a Likert-type 9-point scale ranging from 1 (*does not apply to me at all*) to 9 (*applies very strongly to me*). Higher scores on the overall scale and the subscales indicate better adjustment. Spanish validation of the instrument showed good internal consistency for the full scale ( $\alpha = .94$ ) and for the subscales of academic adjustment (24 items,  $\alpha = .90$ ), social adjustment (20 items,  $\alpha = .85$ ), personal-emotional adjustment (15 items,  $\alpha = .89$ ) and institutional adjustment (15 items,  $\alpha = .85$ ).

Participants also completed a questionnaire on demographics, including gender, parents' educational level (1 = *elementary education*, 2 = *secondary education*, and 3 = *higher education*), parents' employment status (1 = *unemployed* and 2 = *employed*) and parents' income level (1 = *low*, 2 = *medium*, and 3 = *high*). The parents' educational level was calculated as the sum of both parents' educational levels (with values ranging from 2 to 6), and parents' employment status was calculated as the sum of both (with values ranging from 2 to 4). Students' pre-university grades were supplied by the Academic Management Services of the University of Santiago de Compostela (ranging from 0 to 10).

*Procedure*

Students received an e-mail with an invitation to participate in the study, in which the goals and overall procedures were described and data confidentiality was guaranteed. Although students were informed that participation was voluntary, those who completed the questionnaire were compensated with 15€ in cash. Data was collected by two members of the research team during the second semester, with the prior consent of students, according to the deontological code of the Spanish Official College of Psychologists. Administration of the questionnaire and demographic survey took place in a classroom at the University, with groups of ten participants, and took about 30 minutes.

*Data analysis*

Descriptive statistics and Pearson's correlations between entry characteristics and adjustment were calculated. Multiple hierarchical regression analysis was conducted to predict the score for each university adjustment subscale, and the independent variables were entered in three blocks: block 1 examined the effect of gender, block 2 included family background variables (parents' educational level, parents' employment status and parents' income level), and block 3 included pre-university achievement. Estimation of the size and significance of indirect effect was formally tested using the PROCESS macro for IBM SPSS (22.0).

**Results**

*Descriptive statistics and correlations*

Mean values and standard deviations for pre-university achievement and adjustment subscale scores are shown in Table 1.

Taking into account the number of items, students obtained higher average scores for institutional attachment ( $M = 7.51$ ) and lower scores for academic ( $M = 5.80$ ) and personal-emotional adjustment ( $M = 5.97$ ).

An association between gender and pre-university achievement was observed, as women entered university with a higher average

grades than men,  $t(298) = -2.69, p = .007$ . Although the women were better adjusted to academic life than men,  $t(298) = -2.27, p = .024$ , the levels of personal and emotional adjustment were lower than in their male peers,  $t(298) = 2.47, p = .014$ .

Correlation analysis revealed that pre-university achievement was positively correlated with family background variables, academic, social and institutional adjustment (Table 1). Parents' educational level was only significantly and positively correlated with social adjustment (although weakly,  $r = .12, p < .05$ ), indicating that students whose parents have higher levels of education tended to be better socially adjusted to university. The employment status of students' parents and their income level were not significantly related to university adjustment.

*Regression analysis: Direct and indirect effects*

Regression analysis was used to examine the relationships between the variables in this study. Multiple regression analysis revealed that gender and parents' educational level, employment status and income level predicted students' pre-university achievement, explaining 13.8% of the variance ( $F_{(1,296)} = 6.52, p = .011$ ). Parents' educational level ( $\beta = .29, SE = .05, p < .001$ ) and employment status ( $\beta = .14, SE = .11, p < .05$ ) explained a significant amount of the variance in pre-university achievement ( $R^2 \text{ Change} = .116, p < .001$ ), after controlling for gender ( $\beta = .17, SE = .13, p < .01$ ). Parents' income did not have a significant effect on pre-university achievement ( $\beta = .01, SE = .14, p > .05$ ).

In order to examine the predictive power of personal and family variables on adjustment to university, a hierarchical multiple regression analysis was conducted for each adjustment subscale (Table 2 and Table 3). In this analysis, and because the order of entry is known to influence the regression outcome, a three step hierarchical multiple regression was conducted to test whether gender (Step 1), family background (Step 2) or pre-university achievement (Step 3) predicted students' adjustment to university. To assess the unique contribution of each measure on adjustment, we examined the standardized regression coefficients in each regression equation.

Only pre-university achievement was a significant predictor of academic adjustment, social adjustment and institutional attachment. By contrast, only gender predicted personal-emotional adjustment. The final models, including steps 1, 2, and 3, accounted for 13.1% of the variance for academic adjustment

|                          | M             | SD    | PUA   | PEdL  | PEmS  | PL   |
|--------------------------|---------------|-------|-------|-------|-------|------|
| PUA                      | 7.09          | 1.12  |       | .30** | .18** | .12* |
| Academic Adjustment      | 139.36 (5.80) | 28.12 | .34** | .08   | -.01  | .02  |
| Social Adjustment        | 134.25 (6.71) | 19.75 | .23** | .12*  | .01   | -.01 |
| Personal-emotional Adj.  | 89.65 (5.97)  | 22.48 | .06   | .05   | .03   | .00  |
| Institutional Attachment | 112.76 (7.51) | 15.58 | .22** | .09   | -.05  | -.04 |

Note: \*  $p < .05$ , \*\*  $p < .01$ . PUA = Pre-university achievement; PEdL = Parents' educational level (ranging from 2 = both parents with elementary education to 6 = both parents with higher education); PEmS = Parents' employment status (2 = both parents unemployed, 3 = one of the parents employed, and 4 = both parents employed); PL = Parents' income level (1 = low, 2 = middle, and 3 = high)

*Table 2*  
Hierarchical multiple regression analysis with gender, family background and pre-university achievement as independent predictors of academic and social adjustment

| Predictor variables        | Academic |              | Social  |              |
|----------------------------|----------|--------------|---------|--------------|
|                            | $\beta$  | $\Delta R^2$ | $\beta$ | $\Delta R^2$ |
| <b>Step 1</b>              |          |              |         |              |
| Gender                     | .133*    | .018*        | -.053   | .003         |
| <b>Step 2</b>              |          |              |         |              |
| Gender                     | .140*    |              | -.043   |              |
| Parents' educational level | .089     |              | .120    |              |
| Parents' employment status | -.020    |              | -.008   |              |
| Parents' income level      | -.010    | .007         | -.041   | .013         |
| <b>Step 3</b>              |          |              |         |              |
| Gender                     | .080     |              | -.083   |              |
| Parents' educational level | -.013    |              | .052    |              |
| Parents' employment status | -.068    |              | -.040   |              |
| Parents' income level      | -.013    |              | -.043   |              |
| Pre-university achievement | .351***  | .106***      | .233*** | .047***      |

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

*Table 3*  
Hierarchical multiple regression analysis with gender, family background and pre-university achievement as independent predictors of personal-emotional adjustment and institutional attachment

| Predictor variables        | Personal-Emotional |              | Institutional |              |
|----------------------------|--------------------|--------------|---------------|--------------|
|                            | $\beta$            | $\Delta R^2$ | $\beta$       | $\Delta R^2$ |
| <b>Step 1</b>              |                    |              |               |              |
| Gender                     | -.140*             | .020*        | .008          | .000         |
| <b>Step 2</b>              |                    |              |               |              |
| Gender                     | -.137*             |              | .017          |              |
| Parents' educational level | .037               |              | .114          |              |
| Parents' employment status | -.026              |              | -.061         |              |
| Parents' income level      | -.011              | .002         | -.065         | .015         |
| <b>Step 3</b>              |                    |              |               |              |
| Gender                     | -.150*             |              | -.023         |              |
| Parents' educational level | .013               |              | .046          |              |
| Parents' employment status | -.015              |              | -.093         |              |
| Parents' income level      | -.012              |              | -.067         |              |
| Pre-university achievement | .081               | .006         | .236***       | .048***      |

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

( $F_{(5,292)} = 8.83, p < .001$ ), 6.3% of the variance for social adjustment ( $F_{(5,292)} = 3.89, p = .002$ ), 2.7% for personal-emotional adjustment ( $F_{(5,292)} = 1.64, p = .149$ ), and 6.3% for institutional adjustment ( $F_{(5,292)} = 3.93, p = .002$ ).

Gender significantly predicted academic adjustment; however, when pre-university achievement was included in the model (in step 3), the previous significant relationship became non significant, and only pre-university achievement explained academic adjustment. This result suggested that the relation between gender and academic adjustment is mediated by pre-university achievement.

A bootstrapping approach was used to test the mediation effects (Preacher & Hayes, 2004). The direct effect of gender on the mediator as well as the direct effect of the mediator on academic adjustment were determined. The results confirm that gender significantly predicted pre-university achievement ( $\beta = .15, SE = .13, p < .05$ ), and pre-university achievement significantly predicted academic adjustment ( $\beta = .35, SE = 1.37, p < .001$ ). The standardized indirect effect ( $\beta = .05, BootSE = .02$ ) was significant with the 95% bootstrap confidence interval excluding zero (CI = .02, .10). Examination of the ratio of indirect to total effect showed that 39% of the effect of gender on academic achievement was mediated by pre-university achievement.

### Discussion

This study is the first of its type in which the SACQ (Baker & Siryk, 1984) has been used to investigate adaptation to university in a cohort of first-year Spanish students. Studies with European samples are scarce (e.g., Beyers & Goossens, 2002; Rocha & Matos, 2008; Rodríguez et al., 2012) and our findings may help to increase the generalization of North-American students' results.

The results of this study are consistent with others that have also found higher scores for dimensions such as institutional attachment and social adjustment, with North-American first-year students (Cecero, Beitel, & Prout, 2008) and sophomores (second-year students; Taylor & Pastor, 2007), with Canadian first-year students (Larose et al., 2011), and with South-African first-year students (Petersen, Louw, & Dumont, 2009).

In this study, gender was a significant predictor of personal-emotional adjustment, indicating that the level of personal-emotional adjustment is lower in female students than in their male peers. This is consistent with the previous findings indicating that female students display a greater need for support because they tend to suffer more anxiety, depression and identity-related problems associated with integration and coping with the transition to university than male students (e.g., Abdullah et al., 2009; Bernier et al., 2004). One of the key findings of the study was that pre-university achievement mediated the relationship between gender and academic adjustment. Research on gender differences in SACQ scores has produced contradictory results. Some studies have shown that male students obtain higher mean scores than females on the personal-emotional adjustment subscale (Bernier et al., 2004; Napoli & Wortman, 1998), while in other studies women tend to obtain higher scores for academic adjustment than men (Aspelmeier, Love, McGill, Elliott, & Pierce, 2012; Melendez, 2016). Yet other studies have found that gender is not a significant predictor of adjustment (Aderi, Jdaitawi, Ishak, & Jdaitawi, 2013; Bernier et al., 2004). In the present study, the gender of the students was not associated with either social adjustment or attachment to the institution's values and practices. This can be explained in a cultural context. In Spain, students may be more socially dependent than in other cultures, thus engendering the need for social involvement on campus in both men and women and favouring personal relationships and attachment to the institution.

Pre-university achievement was a significant predictor of institutional attachment, academic and social adjustment to university, after controlling for the impact of gender and family background. These findings are consistent with those of other studies using the SACQ, which showed that scholastic aptitude is

related to academic adjustment and institutional attachment (e.g., Wintre et al., 2011). However, it would be misleading to state that the importance of the students' previous academic achievement in university adjustment invalidates the importance of family background. Prior academic achievement is not a fixed, unalterable analytical variable, but rather a situational variable that is the result of numerous factors. This is confirmed by the results of the present study, showing that parents' educational level and employment status predicted students' pre-university achievement, with an incremental variance of 11.6%, after controlling for the impact of gender. This is consistent with previous findings (e.g., Ostrove & Long, 2007; Padgett et al., 2012; Yazedjian et al., 2009) showing that the family background may determine how successful the students will be by influencing their ability to adapt to the various academic, social and personal-emotional challenges in their new university environment via pre-university achievement.

The results of this research have important theoretical and practical implications. Theoretically, it enables researchers to better understand university adjustment. Accumulated empirical and theoretical evidence suggests that the degree to which students are able to successfully adjust to university life may affect their well-being, academic performance and whether they persist with their course of study. For many students, the transition to university is a challenging experience that involves significant life changes and adaptation to multiple demands whose effects and significance must be interpreted in the sociocultural context in which they are produced. In this respect, the present study is unique in that it is the first to investigate relationships between entry characteristics and SACQ dimensions and further extends work in the field by exploring adjustment to university in the context of a Spanish university. From a practical point of view, recognition of the influence of certain variables on the successful transition to university is not by itself sufficient, and empirical

evidence must be presented. This will lead to the development of institutional support systems in Spain, similar to those existing in the US and some European countries, thus promoting successful transition and lowering the attrition rates.

The present findings should be interpreted in light of the study limitations. Thus, although this cross-sectional study is the first to provide data on university adaptation as a multidimensional construct, it was carried out at a single institution, and the study should be widened to include other universities. Second, theoretical models of university transition suggest that adaptation is affected by other variables (e.g. depression, self-esteem, expectations about HE, risky behaviour), which should be analysed in future, thus helping to provide a more detailed picture of adjustment.

In accordance with the study limitations, we believe that future research should incorporate new variables that would enable development of an explanatory model of the factors associated with transition to HE. Moreover, the study would have benefited from the addition of qualitative data that would delineate the factors influencing adjustment and follow-up of the progress of individual students.

#### Acknowledgements

This study is part of a wider project entitled "La Transición a la Universidad en el Contexto del Espacio Europeo de Educación Superior: Influencia del Soporte Social y el Nivel de Integración en el Fracaso/Éxito Académico" [Transition to College in European Higher Education: The Influence of Social Support and Integration on Academic Failure/Success], supported by the Spanish Ministry of Science and Innovation (PSI2011-24535).

The author Alexandra M. Araújo received funding from the Portuguese Foundation for Science and Technology (FCT) awarded as a Post-Doctoral Grant, under grant agreement number SFRH/BPD/85856/2012.

#### References

- Abdullah, M. C., Elias, H., Mahyuddin, R., & Uli, J. (2009). Adjustment amongst first year students in a Malaysian university. *European Journal of Social Sciences*, 8(3), 496-505.
- Aderi, M., Jdaitawi, M., Ishak, N. A., & Jdaitawi, F. (2013). The influence of demographic variables on university students' adjustment in North Jordan. *International Education Studies*, 6(2), 172-178.
- Arnett, J. J. (2000). Emerging adulthood. A theory from the late teens through the twenties. *American Psychologist*, 55(5), 469-480.
- Aspelmeier, J. E., Love, M. M., McGill, L. A., Elliot, A. N., & Pierce, T. W. (2012). Self-esteem, locus of control, college adjustment, and GPA among first- and continuing-generation students: A moderator model of generational status. *Research in Higher Education*, 53(7), 755-781.
- Astin, A. W. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Development*, 25, 297-308.
- Baker, R. W., & Siryk, B. (1984). Measuring adjustment to college. *Journal of Counseling Psychology*, 31(2), 179-189.
- Bean, J. P., & Eaton, S. (2000). A psychological model of college student retention. In J. M. Braxton (Ed.), *Reworking the departure puzzle: New theory and research on college student retention* (pp. 48-61). Nashville, TN: Vanderbilt University Press.
- Beyers, W., & Goossens, L. (2002). Concurrent and predictive validity of the student adaptation to college questionnaire in a sample of European freshman students. *Educational and Psychological Measurement*, 62(3), 527-538.
- Bernier, A., Larose, S., Boivin, M., & Soucy, N. (2004). Attachment state of mind: Implications for adjustment to college. *Journal of Adolescent Research*, 19(6), 783-806.
- Caamaño-Isorna, F., Corral, M., Parada, M., & Cadaveira, F. (2008). Factors associated with risky consumption and heavy episodic drinking among Spanish university students. *Journal of Studies on Alcohol and Drugs*, 69(2), 308-312.
- Cabrera, A. F., Nora, A., & Castañeda, M. B. (1993). College persistence: Structural equations modeling test of an integrated model of student retention. *Journal of Higher Education*, 64(2), 123-139.
- Carayon, S., & Gilles, P. Y. (2005). Développement du questionnaire d'adaptation des étudiants à l'université (QAEU) [Development of the Adaptation Questionnaire for University Students]. *L'Orientation Scolaire et Professionnelle*, 34(2), 165-189.
- Cecero, J. J., Beitel, M., & Prout, T. (2008). Exploring the relationships among early maladaptive schemas, psychological mindedness and self-reported college adjustment. *Psychology and Psychotherapy: Theory, Research and Practice*, 81(1), 105-118.
- Credé, M., & Niehorster, S. (2012). Adjustment to college as measured by the student adaptation to college questionnaire: A quantitative review of its structure and relationships with correlates and consequences. *Educational Psychology Review*, 24(1), 133-165.
- Fierro, D., & Moreno, A. (2007). Emerging adulthood in Mexican and Spanish youth: Theories and realities. *Journal of Adolescent Research*, 22(5), 476-503.

- Friedlander, L. J., Reid, G. J., Shupak, N., & Cribbie, R. (2007). Social support, self-esteem, and stress as predictors of adjustment to university among first-year undergraduates. *Journal of College Student Development, 48*(3), 259-274.
- Jou, Y. H., & Fukada, H. (1995). Effects of social support on adjustment of Chinese students in Japan. *Journal of Social Psychology, 135*, 39-47.
- Larose, S., Cyrenne, D., Garceau, O., Harvey, M., Guay, F., Godin, F., & Deschênes, C. (2011). Academic mentoring and dropout prevention for students in math, science and technology. *Mentoring and Tutoring: Partnership in Learning, 19*, 419-439.
- Moreno, A., Rodríguez, E., Crespo, E., C, Juliá, A., & Fernández-Pacheco, J. L. (2013). *Juventud en España. Informe 2012* [Youth in Spain. Report 2012]. Madrid: Instituto de la Juventud.
- Melendez, M. C. (2016). Adjustment to college in an urban commuter setting: The impact of gender, race/ethnicity and athletic participation. *Journal of College Student Retention: Research, Theory & Practice, 18*(1), 31-48.
- Napoli, A. R., & Wortman, P. M. (1998). Psychosocial factors related to retention and early departures of two-year community college students. *Research in Higher Education, 39*(4), 419-455.
- Organisation for Economic Co-operation and Development (2014). *Education at a glance: OECD indicators*. Paris: Author.
- Ostrove, J. M., & Long, S. M. (2007). Social class and belonging: Implications for college adjustment. *The Review of Higher Education, 30*(4), 363-389.
- Padgett, R. D., Johnson, M. P., & Pascarella, E. T. (2012). First-generation undergraduate students and the impacts of the first-year of college: Additional evidence. *Journal of College Student Development, 53*(2), 243-266.
- Petersen, I., Louw, J., & Dumont, K. (2009). Adjustment to university and academic performance among disadvantaged students in South Africa. *Educational Psychology, 29*(1), 99-115.
- Preacher, K. J. & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers, 36*(4), 717-731.
- Rocha, M., & Matos, P. M. (2008). Adaptação do student adaptation to College Questionnaire (SACQ) a uma amostra de adolescentes de escolas regulares, profissionais e pólos de aprendizagem [Adaptation of the Student Adaptation to College Questionnaire (SACQ) in a sample of adolescents from regular schools, professional schools, and apprenticeship training programs]. *Psicologia, Educação e Cultura, 20*, 171-196.
- Rodríguez, M. S., Tinajero, C., Guisande, M. A., & Páramo, M. F. (2012). The student adaptation to College Questionnaire (SACQ) for use with Spanish students. *Psychological Reports, 111*(2), 624-640.
- Tao, S., Dong, Q., Pratt, M. W., Hunsberger, B., & Pancer, S. M. (2000). Social support: Relations to coping and adjustment during the transition to university in the people's Republic of China. *Journal of Adolescent Research, 15*(1), 123-144.
- Taylor, M.A., & Pastor, D.A. (2007). A confirmatory factor analysis of the student adaptation to College Questionnaire. *Educational and Psychological Measurement, 67*(6), 1002-1018.
- Tinto, V. (1993). *Leaving College: Rethinking the causes and cures of student attrition* (2<sup>nd</sup> ed). Chicago: University of Chicago Press.
- Wintre, M. G., Dilouya, B., Pancer, S. M., Pratt, M. W., Birnie-Lefcovitch, S., Polivy, J., & Adams, G. (2011). Academic achievement in first-year university: Who maintains their high school average? *The International Journal of Higher Education and Educational Planning, 62*(4), 467-481.
- Yazedjian, A., Toews, M. L., & Navarro, A. (2009). Exploring parental factors, adjustment, and academic achievement among white and hispanic college students. *Journal of College Student Development, 50*(4), 458-467.