RESEARCH ARTICLES

Academic Self-Efficacy : Analysis of Internal Structure and Invariance in High School Students from Lima Metropolitana

Autoeficacia académica: análisis de estructura interna e invarianza en estudiantes de secundaria de Lima Metropolitana

Erick Chávez Flores*
Universidad Privada del Norte, Lima, Perú
https://orcid.org/0000-0002-3413-3923

***Correspondence:**

Email: erick.flores@upn.pe

Cited as:

Summary

The objective of the research study was to evaluate the confirmatory factorial structure and the invariance of the measurement according to gender of the scale of perceived self-efficacy specific to academic situations (EAPESA) in high school students of a private educational institution in Metropolitan Lima. A total of 291 high school students participated in the study, made up of 127 women and 164 men with an age range from 12 to 16 years (M=14.010, SD= 1.317). The research developed an instrumental design. A confirmatory factorial structure composed of a single factor (discarding item nine) with adequate adjustment indices (CFI= 0.99, TLI= 0.99, RMSEA= 0.07 IC 90% [0.05-0.09], SMR= 0.03) was evidenced. Likewise, the invariance of the measurement according to sex in high school students was demonstrated (ΔCFI < 0.01 and ΔRMSEA < 0.015). In addition, the values of the internal consistency coefficients were acceptable (α= 0.907 and ω= 0.908). Consequently, the EAPESA presented adequate psychometric properties for use in the field of educational psychology and in the field of research.

Keywords: Self-efficacy; Reliability; Invariance; Educational psychology.

Resumen

El objetivo del estudio de investigación fue evaluar la estructura factorial confirmatoria y la invarianza de la medición según el sexo de la escala de autoeficacia percibida específica de situaciones académicas (EAPESA) en estudiantes de secundaria de una institución educativa particular en Lima Metropolitana. Participaron en el estudio 291 estudiantes de secundaria conformado por 127 mujeres y 164 hombres con rango de edad desde los 12 a 16 años (M=14.010, DE= 1.317). La investigación desarrolló un diseño instrumental. Se evidenció una estructura factorial confirmatoria compuesto por un solo factor (descartando el ítem nueve) con adecuados índices ajustes (CFI= 0.99, TLI= 0.99, RMSEA= 0.07 IC 90% [0.05-0.09], SMR= 0.03). Asimismo, se demostró la invarianza de la medición según el sexo en los estudiantes de secundaria (ΔCFI< 0.01 y ΔRMSEA< 0.015). Además, los valores de los coeficientes de consistencia interna fueron aceptables (α= 0.907 y ω= 0.908). En consecuencia, la EAPESA presentó adecuadas propiedades psicométricas para su empleo en el ámbito de la psicología educativa y en el campo de la investigación.

Palabras clave: Autoeficacia; Confiabilidad; Invarianza; Psicología educativa.

Introduction

Cognitive social theory addresses perceived self-efficacy as a belief that a person adopts to achieve an objective based on their perseverance or motivation (Bandura, 2005). Likewise, people value their abilities in order to be able to carry out their activities (Schunk, 2012). Self-confidence is considered relevant (Rodríguez-Rey and Cantero-García, 2020) and the person's behavior and performance are emphasized (Gunawan et al., 2019). Consequently, the study of self-efficacy in the field of education is important for the development of learning and school performance. Therefore, academic self-efficacy refers to the student's self-assessment with the aim of attaining academic achievement (Robles, 2020) with an outstanding motivation for learning (Yokoyama, 2019). Self-efficacy is important, psychologically, to cope with academic environments.

In Latin America and the Caribbean, various countries as a result of COVID-19 ceased face-to-face classes in schools, colleges and universities, but in turn adopted some measures to not interrupt the educational service by offering distance education to a greater extent (Economic Commission for Latin America and the Caribbean [ECLAC], 2020). Meanwhile, regular basic education in Peru has undergone great changes towards the adoption of virtual education. In this

regard, there is a digital gap between urban and rural areas, as well as a limitation in Internet coverage and its infrastructure (Mateus & Suárez-Guerrero, 2017). Likewise, according to Garcia (2020), the pandemic has generated detrimental impacts, one of them being the worsening of mental health of children and adolescents, causing stress or anxiety in some cases. The change from face-to-face education to virtual education in such a short period of time generated several difficulties of adaptation and an overload of tasks (López-Aguilar & Álvarez-Pérez, 2021). For this reason, expectations of self-efficacy are considered as an effective component in stressful situations and other factors that affect the person (Cabanach et al., 2010; Freire & Ferradás, 2020).

The impact of virtual education has caused the use of multiple digital platforms that provide interaction with students to enhance their learning objectives (Crisol-Moya et al., 2020). In the virtual educational context, the participation of the student in learning acquisition is very important. Therefore, trust in their abilities is vital in order to have a high level of motivation in learning that leads them to have success in the field of education (Galleguillos-Herrera & Olmedo-Moreno, 2019), aligned with the learning objectives (Ramudo et al., 2017), and to develop high values of academic performance (Yokoyama, 2019). Therefore, academic self-efficacy is fundamental to achieve a significant evolution from school to university, being able to adapt to new learning contexts (Van Rooij et al., 2017). It also provides relevant knowledge regarding motivation, attitude and subsequent preferences (Pajares & Schunk, 2001).

Palenzuela (1983) studied academic self-efficacy from the construction of the Perceived Self-efficacy Scale Specific to Academic Situations (EAPESA by its Spanish initials) for high school and university students. The scale was composed of 10 items with a single factor exploratory factor structure and with adequate reliability ($\alpha = 0.91$). In this context, several international studies aimed at adolescents are presented, such as the research conducted by García-Fernández et al. (2010) that validated EAPESA in adolescents aged 12 to 16, through the analysis of main components, evidencing a one-dimensional factor structure. Likewise, García et al. (2016) performed a psychometric analysis in schoolchildren in Chile, and adequate values were obtained. Similarly, Navarro-Loli and Dominguez-Lara (2019) showed acceptable rates in a sample of high school students.

Likewise, studies aimed at university students are presented, as in the Del Valle et al. (2018) research, which showed acceptable indices, resulting in a one-dimensional model with re-specified indices. Dominguez et al. (2012) considered a psychometric analysis in Peruvian university students, establishing an exploratory structure. Likewise, Dominguez (2014) analyzed the factor structure with adequate indicators, validating a one-dimensional model. Finally, Moreta-Herrera et al. (2021) carried out their research with a sample of Ecuadorian university students, and proved a single structure and an acceptable omega coefficient.

Research turns out to be important in knowing the importance of academic self-efficacy in high school students to address their tasks and/or activities at school, thereby helping them cope with stressful situations derived from the burden of academic activities. Teachers, pedagogical specialists or psychologists are the most competent professionals to identify those students who present a problem with their academic or motivational achievement. Therefore, they can exercise programs or accompanying sessions that facilitate their permanence in the educational system, avoiding suspension in their studies. Return to face-to-face education seeks to reduce the digital divide and encourages interaction and visualizes some factors that could influence students' school performance. For this reason, teachers must strengthen and optimize students' skills to guarantee their educational achievement. The objective of the research was to evaluate the confirmatory factor structure (CFA) and the invariance of the measurement of the perceived self-efficacy scale specific to academic situations (EAPESA) in high school students from a particular educational institution in Metropolitan Lima.

Method

Design

The study employed an instrumental design because the psychometric properties of a scale will be considered (Ato et al., 2013; Montero & León, 2007). A non-probability convenience sampling was applied (Otzen and Manterola, 2017) and their inclusion criteria were to be currently enrolled high school students (from first to fifth grade).

Participants

The participation of 291 students from the first to the fifth grade of high school from a private educational institution in Metropolitan Lima, aged from 12 to (M= 14.01, SD= 1,317), was considered. This sample consisted of 127 women (43.64%) and 164 men (56.36%).

Instrument

Palenzuela (1983) created the EAPESA to measure expectations of self-efficacy in a sample of adolescents and university students. This scale is made up of 10 items and describes four response options using the Likert type measurement scale (never= 0, sometimes= 1, quite a few times= 2 and always= 3), being the structure of this instrument one-dimensional. For this research study, the scale validated by Dominguez et al. (2012) was used for the Peruvian context, taking into consideration only nine items of the original version (deleting item 9), resulting in a single-factor structure with an explained variance of 56.261%. In addition, it reported indicators with a good fit $\chi2 = 64.687$ (p<0.01), CFI= 0.978, GFI= 0.969, RMSEA= 0.056 and RMR= 0.029. In the case of reliability, the instrument was considered acceptable ($\alpha = 0.881$).

Procedure

We proceeded to collect the data online using Google Forms with an approximate response time of students ranging from 10 to 15 minutes. Parents' consent was obtained and the research is based on the ethical principles of the university researcher. Likewise, the students were told that their participation is anonymous, maintaining the confidentiality of their data, and voluntary, informing them about the objective of the research and the explanation of the scale to respond. Subsequently, the data were processed in the JASP program version 0.14.1.0 to carry out the procedures of the descriptive statistics and internal consistency coefficients. Finally, evidence of the internal structure such as confirmatory factor analysis (CFA) and also the invariance of the EAPESA measurement was carried out using the R program version 4.1.0.

Data Analysis

First of all, a descriptive process of EAPESA items that comprises the values of the mean, standard deviation, asymmetry and kurtosis was conducted. And with respect to the last two descriptive measures, the range of ± 1.5 will be considered to verify the univariate normality using JASP program version 0.14.1.0. Secondly, the multivariate normality analysis was evaluated by means of the Mardia test; and then the CFA was performed using the R program version 4.1.0, using the estimation of robust weighted least squares (WLMSV). Likewise, the Chi-square statistic ($\chi2$) and the normalized chi-square ratio ($\chi2/gl$) were estimated with a value less than three (Hair et al., 1999; Kline, 2016) and in addition to the global goodness of fit indices: comparative fit index (CFI) ≥ 0.95, mean quadratic standardized residual root (SRMR) ≤ 0.05, mean quadratic error of approximation (RMSEA) ≤ 0.05 to 0.08, Tucker-Lewis index (TLI) ≥ 0.95, for the overall evaluation of the theoretical model (Kline, 2016; Schumacker & Lomax, 2016).In addition, measurement invariance for multiple groups was calculated using the

procedures of configural, metric (or weak), scalar (or strong), and strict (or residual) invariance to verify invariance on the validated model (Brown, 2015) with values of ΔCFI ≤0.01 and ΔRSEAM ≤0.015 (Chen, 2007; Cheung & Rensvold, 2002). Finally, internal consistency was determined by means of the JASP program version 0.14.1.0, estimating the McDonald's (ω) and Cronbach's (α) omega coefficients with acceptable values from the value of 0.70 for both coefficients (Campo-Arias & Oviedo, 2008; Ventura-León & Caycho-Rodríguez, 2017).

Results

Descriptive Analysis of Items

Table 1 shows the descriptive measures for each of the EAPESA items. Item seven presented a higher average (M= 2,162) and item nine presented a lower average (M= 1,031). Regarding variability, item five presented greater variability (SD= 0.871) and item one presented less variability (SD= 0.728). Regarding the values of asymmetry and kurtosis, both univariate statistics are within the range ± 1.5 (Ferrando & Anguiniano-Carrasco, 2010; George & Mallery, 2003).

Table 1.
Descriptive statistics of EAPESA items (n=291)

Items	M	DE	Asymmetry	Kurtosis
P1	1.656	0.728	0.254	-0.550
P2	1.684	0.759	0.123	0.560
P3	1.601	0.805	0.086	0.543
P4	1.849	0.782	-0.077	-0.686
P5	1.598	0.871	0.217	-0.802
P6	1.694	0.851	0.046	0.699
P7	2.162	0.804	-0.501	0.722
P8	1.553	0.797	0.139	0.469
P9	1.031	0.798	0.723	0.429
P10	1.715	0.833	0.036	-0.755

Note. M= mean; SD= standard deviation.

Internal Structure Evidence

The ACFA of EAPESA was performed, initially the Mardia test was performed with the MVN package (Multivariate Normality Tests) of the R program (Korkmaz et al., 2014), demonstrating a multivariate non-normality (p< 0.05) with respect to asymmetry and multivariate kurtosis. Therefore, the robust weighted least squares estimation method (WLSMV) was used. In addition, the response options are measured on a Likert scale (Lloret-Segura et al., 2014; Li, 2016). For the CFA, a first model was evaluated with the 10 original items of the EAPESA instrument, and it was observed that item nine showed a low factor load (< 0.50) and a single factor structure. Then, a second model was evaluated with nine items, excluding item nine, and acceptable factor loads (0.50) were obtained in its one-dimensional structure. Table 2 shows the values of the goodness of fit of the CFA. In this regard, the second model yielded a statistic value $\chi^2(gl)= 66.53(27)$ and adequate goodness of fit indices (CFI= 0.99, TLI= 0.99, RMSEA= 0.07 [90% CI: 0.05-0.09] and SRMR= 0.03). However, the value of $\chi^2/gl = 2.46$ is considered acceptable but should not be

considered as it lacks statistical support (Kline, 2016). The evaluation of the other goodness fit indices is prioritized (Abad et al., 2011, Brown, 2015). The one-dimensional structure is validated by the values shown as a whole (Schumacker & Lomax, 2016)

Table 2.
EAPESA Goodness of Fit Indexes (n=291)

Models	χ^2 (gl)	χ^2/gl	CFI	TLI	RMSEA 90% CI	SRMR
Model 1	92.44(35)	2.64	0.99	0.98	0.08 [0.06 , 0.09]	0.04
Model 2 (deleting item 9)	66.53(27)	2.46	0.99	0.99	0.07 [0.05, 0.09]	0.03

Note. χ2 = Chi square; gl=degrees of freedom; CFI= Comparative fit index; TLI= Tucker-Lewis index; RMSEA= Mean quadratic error of approximation; SRMR= Standardized root mean square residual; CI= confidence intervals

Figure 1 shows that the factor loads of the second EAPESA model vary from 0.67 to 0.86, with significant loads ($\lambda > 0.5$) (Hair et al., 1999).
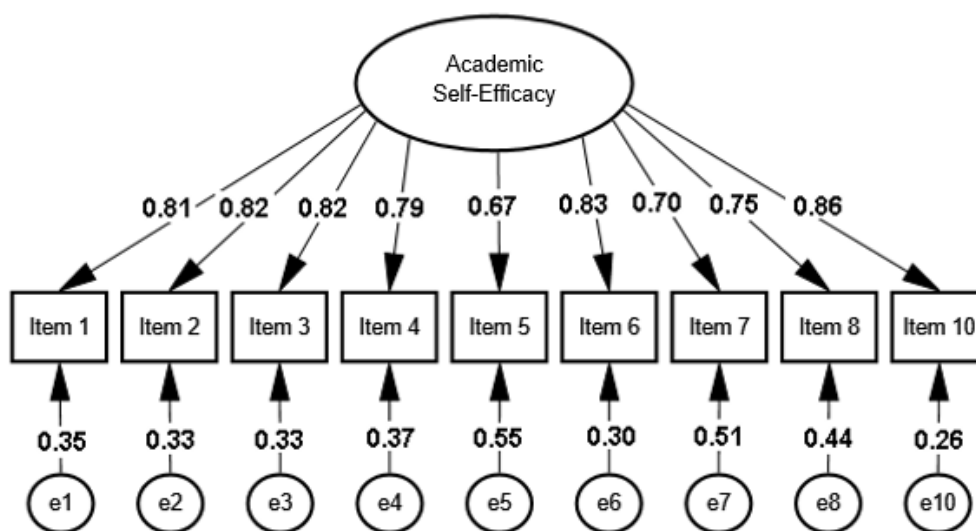
Figure 1.
CFA path diagrams of EAPESA for model 2

Measurement invariance by gender

In Table 3, the second model was evaluated by making the comparison according to gender. Consequently, the configural invariance that yielded adequate indices (CFI= 0.97, RMSEA= 0.05, SRMR= 0.04) was used. Also, the metric invariance showed significant values (CFI= 0.97, RMSEA= 0.05, SRMR= 0.05). Likewise, the strong invariance was tested (CFI= 0.97, RMSEA= 0.04, SRMR=0.05) and finally, the strict invariance showed acceptable indices (CFI= 0.96, RMSEA= 0.05, SRMR= 0.06). Likewise, ΔCFI ≤ 0.01 and ΔRMSEA≤ 0.015 provide values that verify the invariance of EAPESA measurement according to gender (Chen, 2007; Cheung & Rensvold, 2002).

Table 3.

EAPESA measurement invariance by gender

Invariance	χ^2 (gl)	CFI	RMSEA	SRMR	ΔCFI	ΔRMSEA
Configural	72.07(54)	0.97	0.05	0.04	-	-
Metric	80.70(62)	0.97	0.05	0.05	0.00	0.00
Strong	89.77(70)	0.97	0.04	0.05	0.00	-0.01
Strict	106.03(79)	0.96	0.05	0.06	-0.01	0.01

Note. χ2=Chi square; gl=degrees of freedom; CFI= Comparative fit index; RMSEA= Mean quadratic error of approximation; SRMR= Standardized root mean squared residual

Internal Consistency

Values for Cronbach's alpha ($\alpha = 0.907$) and McDonald's Omega ($\omega = 0.908$) coefficients acceptable for the second one-dimensional characteristic model were obtained.

Discussion

The objective of this research study was to evaluate the confirmatory factor structure and invariance of EAPESA measurement in high school students in Metropolitan Lima.

The analysis of the evidence of internal structure through the EAPESA CFA validated its one-dimensional structure according to the studies carried out by Palenzuela (1983), García et al. (2016) and Navarro-Loli and Domínguez-Lara (2019) for samples in adolescents. These last two research studies maintained the 10 items of the original version and the last research study excluded three items for the final model, respectively. In addition, only the research conducted by Navarro-Loli and Domínguez-Lara (2019) used the WLSMV estimation in the same way with the present research. Likewise, various studies (Del Valle et al., 2018; Dominguez Lara et al., 2012; Dominguez Lara, 2014; Moreta-Herrera et al., 2021) also demonstrated a single-factor structure, but in samples of university students.

The reliability analysis reported acceptable values ($\alpha = 0.907$ and $\omega = 0.908$). This finding is similar to the study conducted by Navarro-Loli and Dominguez-Lara (2019) with adequate values of $\alpha = 0.866$ and $\omega = 0.901$, unlike the studies of Palenzuela (1983), García-Fernández et al. (2010) and García et al. (2016) that showed only the Cronbach's alpha coefficient ($\alpha > 0.8$) and the study conducted by Moreta-Herrera et al. (2021) that showed only the Omega reliability coefficient ($\omega = 0.91$), which was appropriate.

Regarding the findings, the invariance of the EAPESA measurement in high school students according to gender was verified. Concordance in its internal structure was verified for both men and women in the nested configural, metric, strong and strict models, evidencing the inexistence of bias in both groups.

Some limitations for the development of the research study include the number of high school students, and its expansion is recommended for future research. Likewise, the data collection procedure through a digital platform reduces the participation of students in responding to the scale online. Likewise, non-probability sampling was used and it restricts the extension of the results. Another limitation is the scarcity of research studies on samples of high school students for comparison with the internal structure and measurement invariance findings of this study. Consequently, expanding the sample size and opting for face-to-face data collection are advisable, since this will reduce bias when students respond to the instrument.

Conclusions

In conclusion, academic self-efficacy is a relevant factor in student development during their educational stage. The adequate psychometric property of EAPESA is shown to be reliable for application and relevant for its use in further research studies related to the field of educational psychology that help to know the perspectives of academic self-efficacy in high school students to execute strategies that consolidate their school success.

References

Abad, F. J., Olea, J., Ponsoda, V. y García, C. (2011). *Medición en ciencias sociales y de la salud*. Síntesis.

Ato, M., López, J., y Benavente, A. (2013). Sistema de clasificación en diseños de investigación en psicología. *Revista Anales de Psicología*, *29*(3), 1038-1059. https://doi.org/10.6018/analesps.29.3.178511

Bandura, A. (2005). Social Cognitive Theory: An Agentic Perspective. *Psychology*, *12*(3), 313-333. https://ejournals.epublishing.ekt.gr/index.php/psychology/article/view/23964/20057

Brown, T. (2015). *Confirmatory Factor Analysis for Applied Research*. The Guilford Press.

Cabanach, R. G., Valle, A., Rodríguez, S., Piñeiro, I., y González, P. (2010). Las creencias motivacionales como factor protector del estrés en estudiantes universitarios. *European Journal of Education and Psychology*, *3*(1), 75-87. https://doi.org/10.30552/ejep.v3i1.49

Campo-Arias, A., y Oviedo, H. C. (2008). Propiedades Psicométricas de una Escala: la Consistencia Interna. *Revista de Salud Pública*, *10*(5), 831-839. https://www.redalyc.org/articulo.oa?id=42210515

Comisión Económica para América Latina y el Caribe (2020). *La educación en tiempos de pandemia de COVID-19*. https://repositorio.cepal.org/handle/11362/45904

Crisol-Moya, E., Herrera-Nieves, L., & Montes-Soldado, R. (2020). Educación virtual para todos: una revisión sistemática. *Education in the Knowledge Society*, *21*, 1-13. https://doi.org/10.14201/eks.23448

Chen, F. F. (2007). Sensitivity of Goodness of Fit Indexes to Lack of Measurement Invariance. *Structural Equation Modeling*, *14*(3), 464–504. https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.459.8501&rep=rep1&type=pdf

Cheung, G. W., & Rensvold, R. B. (2002). Evaluating Goodness-of-Fit Indexes for Testing Measurement Invariance. *Structural Equation Modeling*, *9*(2), 233–255. https://asset-pdf.scinapse.io/prod/2089871805/2089871805.pdf

Del Valle, M., Díaz, A., Pérez, M. V., y Vergara, J. (2018). Análisis Factorial Confirmatorio Escala Autoeficacia Percibida en Situaciones Académicas (EAPESA) en Universitarios Chilenos. *Revista Iberoamericana de Diagnóstico y Evaluación Psicológica – e Avaliação Psicológica*, *4*(49), 97-106. https://doi.org/10.21865/RIDEP49.4.08

Dominguez, S. A., Villegas, G., Yauri, C., Mattos, E., y Ramírez, F. (2012). Propiedades psicométricas de una escala de autoeficacia para situaciones académicas en estudiantes universitarios peruanos. *Revista De Psicología, 2*, 27–40. https://revistas.ucsp.edu.pe/index.php/psicologia/article/view/8

Dominguez, S. A. (2014). Autoeficacia para situaciones académicas en estudiantes universitarios peruanos: un enfoque de ecuaciones estructurales. *Revista De Psicología*, *4*, 43–54. https://revistas.ucsp.edu.pe/index.php/psicologia/article/view/20/19

Ferrando, P. J. y Anguiano-Carrasco, C. (2010). El análisis factorial como técnica de investigación en psicología. *Papeles del Psicólogo*, *31*(1), 18-33 https://www.redalyc.org/articulo.oa?id=77812441003

Freire, C., y Ferradás, M. M. (2020). Afrontamiento del estrés académico y autoeficacia en estudiantes universitarios: un enfoque basado en perfiles. *Revista INFAD de Psicología. International Journal of Developmental and Educational Psychology*, *1*(1), 133–142. https://revista.infad.eu/index.php/IJODAEP/article/view/1769/1562

Galleguillos-Herrera, P., y Olmedo-Moreno, E. (2019). Autoeficacia y motivación académica: Una medición para el logro de objetivos escolares. *European Journal of Investigation in Health, Psychology and Education*, *9*(3), 119-135. https://doi.org/10.30552/ejihpe.v9i3.329

García, S. (2020). *COVID-19 y educación primaria y secundaria: repercusiones de la crisis e implicaciones de política pública para América Latina y el Caribe*. UNICEF. https://www.unicef.org/lac/informes/covid-19-y-educacion-primaria-y-secundaria

García-Fernández, J. M., Inglés, C. J., Torregrosa, M. S., Ruiz-Esteban, C., Díaz-Herrero, Á., Pérez-Fernández, E., y Martínez-Monteagudo, M. C. (2010). Propiedades psicométricas de la Escala de Autoeficacia Percibida Específica de Situaciones Académicas en una muestra de estudiantes españoles de Educación Secundaria Obligatoria. *European Journal of Education and Psychology*, *3*(1), 61-74. https://dialnet.unirioja.es/servlet/articulo?codigo=3227498

García, J. M., Inglés, C. J., Vicent, M., Gonzálvez, C., Pérez, A.M., y San Martín, N. L. (2016). Validación de la Escala de Autoeficacia Percibida Específica de Situaciones Académicas en Chile y su Relación con las Estrategias de Aprendizaje. *Revista Iberoamericana de Diagnóstico y Evaluación Psicológica*. *1*(41), 118-131. https://www.aidep.org/03_ridep/2_volumen41.html

George, D., & Mallery, M. (2003). *Using SPSS for Windows step by step: a simple guide and reference*. Allyn & Bacon.

Gunawan, F., Mayasari, R., Muna, W., & Masruddin, M. (2019). Lecturer's Language Style and Students' Academic Self Efficacy in Higher Education of Indonesia. *Arab World English Journal*, *10*(2), 77-87. https://doi.org/10.24093/awej/vol10no2.7

Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1999). *Análisis multivariante* (5.ª Ed.). Prentice Hall.

Li, Ch. (2016). Confirmatory factor analysis with ordinal data: Comparing robust maximum likelihood and diagonally weighted least squares. *Behavior Research Methods*, *48*(3), 936–949. https://doi.org/10.3758/s13428-015-0619-7

López-Aguilar, D., y Álvarez-Pérez, P. R. (2021). Modelo predictivo PLS-SEM sobre intención de abandono académico universitario durante la COVID-19. *Revista Complutense de Educación*, *32*(3), 451-461. https://doi.org/10.5209/rced.70507

Lloret-Segura, S., Ferreres-Traver, A., Hernández-Baeza, A., y Tomás-Marco, I. (2014). El análisis factorial exploratorio de los ítems: una guía práctica, revisada y actualizada. *Anales de Psicología*, *30*(3), 1151-1169. http://doi.org/10.6018/analesps.30.3.199361

Mateus, J.C., & Suárez-Guerrero, C. (2017). La competencia TIC en el nuevo currículo peruano desde la perspectiva de la educación mediática. *EDMETIC*, *6*(2), 129-147. https://doi.org/10.21071/edmetic.v6i2.6908

Moreta-Herrera, R., Montes de Oca, C., Navarro, L. F., y Villegas, N. (2021). Validez factorial con estimación robusta de la Escala de Autoeficacia Percibida Específica de Situaciones Académicas (Eapesa) en universitarios ecuatorianos. *Ciencias Psicológicas*, 15(1), 1-12. https://doi.org/10.22235/cp.v15i1.2153

Montero, I., & León, O. G. (2007). A guide for naming research studies in Psychology. *International Journal of Clinical and Health Psychology*, *7*(3), 847-862. https://www.redalyc.org/articulo.oa?id=33770318

Navarro-Loli, J. S., y Domínguez-Lara, S. A. (2019). Propiedades psicométricas de la Escala de Autoeficacia Percibida Específica de Situaciones Académicas en adolescentes peruanos. *Psychology, Society, & Education*, *1*1(1), 53-68. http://hdl.handle.net/10835/6933

Kline, R. (2016). *Principles and Practice of Structural Equation Modeling*. The Guilford Press.

Korkmaz, S., Goksuluk, D., & Zararsiz, G. (2014). MVN: An R Package for Assessing Multivariate Normality. *The R Journal*, *6*(2), 151-162. https://doi.org/10.32614/RJ-2014-031

Otzen, T., & Manterola, C. (2017). Técnicas de muestreo sobre una población a estudio. *International Journal of Morphology*, *35*(1), 227-232. http://www.intjmorphol.com/wp-content/uploads/2017/04/art_37_351.pdf

Pajares, F., & Schunk, D.H. (2001). Self-Beliefs and School Success: Self-Efficacy, Self-Concept, and School Achievement. En R. Riding & S. Rayner (Eds.), *Self Perception* (pp. 239-265). Ablex Publishing. https://psycnet.apa.org/record/2001-05481-011

Palenzuela, D. (1983). Construcción y validación de una escala de autoeficacia percibida específica de situaciones académicas. *Análisis y Modificación de Conducta*, *9*(21), 185-219. https://dialnet.unirioja.es/servlet/articulo?codigo=7101317

Ramudo, I., Brenlla, J. C., Barca, E., y Peralbo, M. (2017). Autoeficacia, metas académicas y género: su impacto en el rendimiento académico del alumnado de bachillerato. *Revista de estudios e investigación en psicología y educación*, (01), 133-137. https://doi.org/10.17979/reipe.2017.0.01.2432

Robles, H. (2020). Escala de autoeficacia académica en estudiantes universitarios de Lima. *Avances en Psicología*, *28*(1), 99-107. https://doi.org/10.33539/avpsicol.2020.v28n1.2115

Rodríguez-Rey, R., y Cantero-García, M. (2020). Albert Bandura: Impacto en la educación de la teoría cognitiva social del aprendizaje. *Padres y Maestros*, (384), 72-76. https://doi.org/10.14422/pym.i384.y2020.011

Schumacker, R., & Lomax, R. (2016). *A beginner's guide to structural equation modeling*. Routledge

Schunk, D. (2012). *Teorías del aprendizaje. Una perspectiva educativa* (6.ª ed.). Pearson Educacion.

Van Rooij, E., Jansen, E., & Van de Grift, W. (2017). Factors that contribute to secondary school students' self-efficacy in being a successful university student. *Research in Post-Compulsory Education*, *22*(4), 535-555. https://doi.org/10.1080/13596748.2017.1381301

Ventura-León, J. L., y Caycho-Rodríguez, T. (2017). El coeficiente Omega: un método alternativo para la estimación de la confiabilidad. *Revista Latinoamericana de Ciencias Sociales, Niñez y Juventud*, *15*(1), 625-627. https://www.redalyc.org/articulo.oa?id=77349627039

Yokoyama, S. (2019). Academic Self-Efficacy and Academic Performance in Online Learning: A Mini Review. *Frontiers in Psychology*, *9*(2794),1-4. https://doi.org/10.3389/fpsyg.2018.02794