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DIVERSITY IN HIGHER EDUCATION: STUDENTS' GRITS AND FEARS

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Abstract

Framework: Demographic changes, which have taken on a new paradigm after the COVID-19 pandemic, have led researchers to approach diversity with a focus on gaining a competitive advantage. Therefore, one of the objectives is to obtain knowledge regarding the new generations in the changing landscape of education, which requires attention to the needs of teaching a multicultural audience. With globalization and the migration of people from different countries and backgrounds to different countries, classrooms are becoming increasingly diverse, which means that teachers need to be prepared to work with students who have different cultural, linguistic, and socioeconomic backgrounds, as well as different experiences and learning styles. In this sense, it becomes urgent to understand the students who are part of the University so that we can realize diversity in each of the domains that make up the M-GUDS-S scale, in the dimensions of Diversity of Contact with Others, Relativistic Appreciation and Comfort with Differences, which require an adequate measurement of attitudes and dispositions towards diversity.

Objective: Our aim is to validate the Miville-Guzman Universality-Diversity Scale (M-GUDS-S) for the Portuguese population, specifically for higher education students, and it has been applied in institutions of higher education in Portugal in the field of Social Sciences. We also intend to contribute to the Portuguese research on Universal-diverse orientation (UDO) by providing a differentiated tool that aims to provide insight to organisations on the different directions and approaches towards diversity applied to new audiences (e.g., students from different educational levels, teachers, workers from other sectors, ...).

Methodology: During the period from November 2021 to January 2022, the survey was applied to 820 students from different academic programs and courses, during a time of adaptation to the new reality of physical presence in classrooms. The M-GUDS-S scale comprises three subscales that evaluate the corresponding dimensions of Diversity of Contact, Relativistic Appreciation, and Comfort with Differences. Structural equation modelling, specifically confirmatory factor analysis, was employed to validate the adaptation and translation of the scale.

Results: The final sample consisted of 820 Portuguese university students from the Social Sciences area. In terms of age range, 54.1% belonged to the 17-20 age group, while 37.3% were from the 21-25 age group. 83.4% were Portuguese, 7.9% were from African countries, and 7.6% were Brazilian. 88.4% were undergraduate students, and 11.1% were graduate students. Regarding gender, females predominated with 62.2%. The factorial validity of the Portuguese adaptation of the M-GUDS-S (Short Form) scale was accomplished, and the three-factor model was composed of 13 out of the original 15 items, showing a very good goodness-of-fit.

Implications: We believe that the validation of the M-GUDS-S scale for the Portuguese language is crucial to measure and understand attitudes and dispositions towards cultural and linguistic diversity among higher education students in Portugal. Understanding students' diversity is essential to promote an inclusive and welcoming classroom environment, which can have a significant impact on academic

success and student satisfaction. Furthermore, adapting teaching methods and materials to meet the needs of students from different cultural and linguistic backgrounds can improve the quality of education and prepare students for the increasingly diverse and globalized world we live in. In terms of public policies, this tool provides an opportunity to take new policies into consideration, seeking to be guided by an attitude of awareness and acceptance of the similarities and differences between people.

Originality: As a distinctive factor of this study, we highlight the application of the M-GUDS-S scale in Higher Education students in Portugal, aiming at obtaining a better knowledge of students from different demographic, family, economic and social backgrounds, exploring individual attitudes and resistance to diversity, based on their differences.

Keywords: Diversity, higher education, students, minorities.

1 INTRODUCTION

The ongoing panorama of change in education, which comes with new generations, requires an increasing awareness of the need to teach and adapt methodologies for a multicultural audience. With globalisation and the migration of people from different origins to different countries, classrooms are becoming more diverse and heterogeneous [4]. Thus, teachers need to be prepared to work with students who have different cultural, linguistic, and socio-economic backgrounds [6] as well as different backgrounds of experiences and ways of being to the classroom [2].

Demographic changes, which have taken on a new paradigm after the COVID-19 pandemic, have led researchers to approach diversity with a focus on gaining a competitive advantage. Therefore, one of the objectives is to obtain knowledge regarding the new generations in the changing landscape of education, which requires attention to the needs of teaching a multicultural audience. With globalization and the migration of people from different countries and backgrounds to different countries, classrooms are becoming increasingly diverse, which means that teachers need to be prepared to work with students who have different cultural, linguistic, and socioeconomic backgrounds, as well as different experiences and learning styles [7]. In this sense, it becomes urgent to understand the students who are part of the University so that we can realize diversity in each of the domains that make up the M-GUDS-S scale, in the dimensions of Diversity of Contact with Others, Relativistic Appreciation and Comfort with Differences, which require an adequate measurement of attitudes and dispositions towards diversity.

Our aim is to validate the Miville-Guzman Universality-Diversity Scale (M-GUDS-S) for the Portuguese population, specifically for higher education students, and it has been applied in institutions of higher education in Portugal in the field of Social Sciences. We also intend to contribute to the Portuguese research on Universal-diverse orientation (UDO) by providing a differentiated tool that aims to provide insight to organisations on the different directions and approaches towards diversity applied to new audiences (*e.g.*, students from different educational levels, teachers, workers from other sectors, ...).

2 METHODOLOGY

During the period from November 2021 to January 2022, the survey was applied to 820 students from different academic programs and courses, during a time of adaptation to the new reality of physical presence in classrooms. The M-GUDS-S scale comprises three subscales that evaluate the corresponding dimensions of Diversity of Contact, Relativistic Appreciation, and Comfort with Differences. Structural equation modelling, specifically confirmatory factor analysis, was employed to validate the adaptation and translation of the scale.

Confirmatory factor analysis was performed with the 15 items of M-GUDS-S, using IBM's AMOS v. 24 software, by applying the maximum likelihood estimation method described by Hair, Black, Babin and Anderson (2019). In addition, adjustment quality indices and respective reference values were used as suggested by Hair et al. (2019). These included chi-square/degrees of freedom (χ^2/df), comparative fit index (CFI), goodness of fit index (GFI), parsimonious (P)CFI, PGFI, root mean square error of approximation (RMSEA), $P(RMSEA \leq 0.05)$ and modified expected cross validation index (MECVI). The quality of local adjustment was assessed by the factor loadings, and the modification indices were analysed when the model did not present good data adjustment.

In addition to determining the overall quality of adjustment, the constructs' reliability and validity were assessed. To determine reliability, composite reliability (CR) (Fornell & Larcker, 1981) was used as this is an alternative measure of reliability particularly suitable for use in factor analysis, thereby confirming the constructs' adequate reliability ($CR \geq 0.7$). Regarding factor validity, all the items presented factor loadings above 0.5, indicating that the three dimensions present acceptable validity. For convergent validity, the average variance extracted (AVE), of all 3 dimensions, was calculated, confirming that the AVE values obtained were above 0.5 and thus verifying suitable convergent validity.

Finally, discriminant validity was determined by following Fornell and Larcker's (1981) guidelines, in which the AVE values of any two constructs are compared with the square of the correlation coefficient between them. The results, in general, show that the factors' AVE values were higher than the square of the correlation coefficient between those factors. When this condition was not found, discriminant validity was checked by testing the difference between the χ^2 for a model with correlations between the factors fixed at 1 (χ^2_r) and an unrestricted model (χ^2_u). This difference was significant and thus confirmed the existence of discriminant validity.

3 RESULTS

The final sample consisted of 820 Portuguese university students from the Social Sciences area. In terms of age range, 54.1% belonged to the 17-20 age group, while 37.3% were from the 21-25 age group. 83.4% were Portuguese, 7.9% were from African countries, and 7.6% were Brazilian. 88.4% were undergraduate students, and 11.1% were graduate students. Regarding gender, females predominated with 62.2%. The factorial validity of the Portuguese adaptation of the M-GUDS-SS-Short Form scale was performed, and the three-factor model was composed of 13 out of the original 15 items, showing a very good goodness-of-fit.

3.1 Reliability and validity of the measurement instrument for the M-GUD-S scale

The factorial validity of the model aimed at describing attitudes related to diversity issues and interpersonal style in a sample of 855 students was evaluated through confirmatory factor analysis using the software AMOS (v. 24, SPSS Inc, Chicago, IL). Composite reliability (CR) and average variance extracted (AVE) for each dimension were evaluated as described in Fornell and Larcker (1981).

The existence of outliers was evaluated by the squared Mahalanobis distance (DM²), and the normality of variables was assessed by univariate and multivariate skewness (sk) and kurtosis (ku) coefficients. Thirty-five observations had DM² values that suggested they were outliers, so confirmatory factor analysis was performed without these observations, resulting in a final sample of 820 students. No variable had Sk and Ku values indicative of severe violations of the normal distribution ($|Sk| < 3$ and $|Ku| < 10$, Hair et al., 2009). The overall fit of the factorial model was evaluated according to the indices and respective values of χ^2/df , CFI, GFI, PCFI, PGFI, RMSEA, P [$rmsea \leq 0.05$], and MECVI. Local fit was assessed by the factor loadings and individual item reliability. Model refinement was performed based on modification indices by Lagrange multipliers (LM) produced by AMOS, considering that trajectories and/or correlations with $LM > 11$ ($p < 0.001$) were indicative of significant model quality variation.

The tri-factorial model of the original M-GUDS-S, adjusted to a sample of 855 students, revealed poor fit indices ($\chi^2/df=7.162$; CFI=0.893; GFI=0.907; PCFI=0.740; PGFI=0.657; RMSEA=0.085; $P[rmsea \leq 0.05] < 0.001$; MECVI=0.808). After removing 35 outlier observations, item MGUDS12 ('*It is very important that a friend agrees with me on most issues*') from the 'Comfort with Differences' dimension with a factor loading below 0.5, and MGUDS13 ('*I attend events where I might get to know people from different racial backgrounds*') from the 'Diversity of Contact' dimension, whose modification indices suggested the saturation of this item in factors different from those suggested in the original version, and correlating measurement errors e4 and e7, e4 and e10 from the 'Diversity of Contact' dimension, and e2 with e5, e8, e11, and e14, as well as e5 with e8 and e11 from the 'Relativistic Appreciation' dimension, and errors e3 and e6 from the 'Comfort with Differences' dimension, it was possible to obtain good fit indices ($\chi^2/df=4.995$; CFI=0.955; GFI=0.950; PCFI=0.661; PGFI=0.564; RMSEA=0.070; $P[rmsea \leq 0.05] < 0.001$; MECVI=0.421). The composite reliability (CR) of the factors was high, being 0.818 for 'Diversity of Contact', 0.859 for 'Relativistic Appreciation', and 0.819 for 'Comfort

with Differences', indicating that the construct reliability is adequate ($CR \geq 0.7$). The average extracted variance (AVE), an indicator of convergent validity, was also adequate ($AVE \geq 0.5$), being 0.532 for 'Diversity of Contact', 0.554 for 'Relativistic Appreciation', and 0.539 for 'Comfort with Differences'.

The discriminant validity of the factors was evaluated by comparing the AVEs with the squares of the correlations between the various dimensions, as shown in table 1.

Table 1. Correlations between the various dimensions of the 'M-GUDS-S' scale.

			Correlation (r)	r ²	p
Relativistic Appreciation	↔	Comfort with Differences	-0.211	0,045	***
Diversity of Contact	↔	Relativistic Appreciation	0.857	0,734	***
Diversity of Contact	↔	Comfort with Differences	-0.323	0,104	***

***p≤0.001

The square of the correlation between dimensions is lower than the value of AVE for the correlations between 'Relativistic Appreciation' and 'Comfort with Differences', as well as between the dimensions 'Diversity of Contact' and 'Comfort with Differences'. However, for the correlation between 'Diversity of Contact' and 'Relativistic Appreciation', the square of the correlation between factors is higher than the value of AVE, so the discriminant validity of the factors was evaluated by the χ^2 difference test between the model with fixed factor correlations at 1 (χ^2_r) and the unrestricted model (χ^2_u) (table 2). Table 2 presents the values of the χ^2 difference between the model with fixed factor correlation at 1 (χ^2_r) and the unrestricted model (χ^2_u) among the various dimensions.

Table 1. χ^2 difference between the model with fixed factor correlation at 1 (χ^2_r) and the unrestricted model (χ^2_u).

			χ^2_r	χ^2_u	χ^2_{dif}
Diversity of Contact	↔	Relativistic Appreciation	c ² (54)=269.724	c ² (53)=221.759	c ² (1)=47.965

This test proved to be significant for the relationship in question assuming a significance level of 0.001, thus confirming the discriminant validity between these dimensions. Therefore, the validity and reliability of the factors (dimensions) that constitute the 'M-GUDS-S' measurement instrument are confirmed.

4 CONCLUSIONS

Implications: We believe that the validation of the M-GUDS-S-S scale for the Portuguese language is crucial to measure and understand attitudes and dispositions towards cultural and linguistic diversity among higher education students in Portugal. Understanding students' diversity is essential to promote an inclusive and welcoming classroom environment, which can have a significant impact on academic success and student satisfaction. Furthermore, adapting teaching methods and materials to meet the needs of students from different cultural and linguistic backgrounds can improve the quality of education and prepare students for the increasingly diverse and globalized world we live in. In terms of public policies, this tool provides an opportunity to take new policies into consideration, seeking to be guided by an attitude of awareness and acceptance of the similarities and differences between people [5].

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REFERENCES

- [1] Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics.
- [2] Griffin, K. A., & Denson, N. (2018). Diversity and inclusion in higher education: A systematic review and critique. *Diversity and Inclusion*, 4(1), 1–17. <https://doi.org/10.1186/s13631-018-0079-8>
- [3] Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E. (2019). *Multivariate data analysis*. Cengage edition.
- [4] Harris, J. C., & Manganello, J. L. (2019). Toward a more inclusive academy: The impact of diversity training on faculty attitudes and behaviors. *Journal of Diversity in Higher Education*, 12(3), 223–239. <https://doi.org/10.1037/dhe0000088>
- [5] Miville, M. L. (1992). *Measuring and defining universal orientation*. Unpublished master's thesis, University of Maryland at College Park.
- [6] Smith, D. G., & McClendon, S. A. (2018). Multiculturalism in higher education: A review of recent research. *Journal of Diversity in Higher Education*, 11(1), 1–12. <https://doi.org/10.1037/dhe0000053>
- [7] Pineda, P. & Mishra, S. (2023). The semantics of diversity in higher education: differences between the Global North and Global South. *Higher Education*, 85, 865–886. <https://doi.org/10.1007/s10734-022-00870-4>