Do Institutions Matter in Student Engagement? A Comparison of Engagement Between Two Universities in Different Contexts

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Abstract. The impact of academic engagement on student attrition has been extensively studied over the years. Tinto's Model of Student Attrition suggests that engagement is a key predictor of student dropout while highlighting the importance of understanding how the environment affects engagement. However, there have been limited studies on this relationship in lower-income countries. To address this gap, we conducted a survey of two samples from universities in the United States and Bolivia to assess for significant differences. Our results from a two-by-two factorial multivariate analysis of variance (MANOVA) indicate that there are significant differences in engagement levels between the two groups, suggesting that the institutional environment may play a role in student engagement.

Keywords: Institutional Characteristics, Learner Engagement, College Students, Multivariate Analysis, Foreign Countries.

1. Introduction

Research across several years has been conducted to determine the reasons behind student dropout rates (Zhang, 2016), as it has significant implications for both economic and social growth. Due to the complexity of the topic, numerous theories and models have been developed over the years to describe, predict, and reduce academic dropout (Finn & Rock, 1997; Fredricks et al., 2004; Wehlage, 1989). One of the most prominent and perhaps most influential American researcher, Vincent Tinto, has developed a model which identifies six influential variables in explaining student departure. Within this model, normative integration, which encompasses academic and social engagement, is considered the most significant variable (Tinto, 2006).

The significance of student engagement in lower-income countries, such as Bolivia, is undeniable, yet research on this topic remains limited. Despite favorable macroeconomic conditions, Bolivia continues to struggle with a high dropout rate of 48% within the first year of higher education (Feinberg, 2018). Consequently, it is crucial to investigate the relationship between engagement and dropouts, especially in regions with limited resources for interventions.

Therefore, an examination of engagement in Bolivia, including an analysis of how engagement operates across different ethnic and racial groups, is imperative. Ultimately, this knowledge will enable more effective targeting of interventions to increase engagement and reduce dropout rates.

2. Theoretical Framework

The theoretical framework of this study is informed by the work of Vincent Tinto. His early work in 1975 explores—for the first time—the explicit connection between environment and students, especially in what he called the critical first year of college "We learned that involvement matters and that it matters most during the critical first year of college" (Tinto, 2006, p. 3).

Tinto's original model finds its theoretical roots in the notions of the economics of education, such as the cost-benefit analysis of individual decisions and the notions of social psychology. These two sources provide the foundation from which his model "explains the longitudinal process of interactions that lead differing persons to various forms of persistence and/or dropout behavior" (Tinto, 1975, p. 93) so that the individual's integration level (what we now know as
engagement) to academic and social systems is constantly modifying his institutional commitment.

In his model, personal entry attribute that the individual brings to college, find an academic and social system in which they will develop some level of integration that will, in turn, influence their goal and institutional commitment and, finally, the dropout decisions (Tinto, 1975, 2006).

So goal commitment and institutional commitment are influenced by both personal characteristics and academic and social integration. According to Tinto, "It is the individual's. integration into the academic and social systems [. . .] that most directly relates to his continuance in that college" (Tinto, 1975, p. 96).

3. Methods

Utilizing data from the Student Engagement Survey (SES) developed by the Office of University Assessment and Testing at Oklahoma State University, the study analyzed 2020 data to compare the engagement questionnaire results of two universities with varying economic, cultural, and social backgrounds. The study involved first- and second-year students from two universities: one in the United States a land-grant institution in the mid-west with more than 35,000 students, and one in Bolivia a public university with more than 40,000 students. The data was collected during the spring and summer of 2020 from students who were enrolled in their first and second years of college.

After completing the cleaning procedures, the Bolivian sample consisted of 544 students (241 freshmen and 303 sophomores), while the American sample had 2,419 students (1,018 freshmen and 1,401 sophomores). However, since the categorical groups were largely unevenly distributed, we randomly selected samples from the United States' sample to match the size of Bolivia's sample to perform an accurate analysis. The final total sample size was 1,088, with equal sample sizes for each categorical group.

The survey measures Academic Effort, Higher-order Learning, Interaction, Supportive Environment, and Involvement. Advanced statistical analysis confirmed the survey's reliability (Cronbach's alpha = 0.900) and validity (CFI = 0.821). The Spanish version of the survey was approved for use in Bolivia.

4. Results

A factorial MANOVA was conducted to compare the interaction and main effects of the institution and class level on five engagement attributes: Academic effort, Interaction, Higher order learning, Supportive Environment, and Involvement. It was conducted on the influence of the two independent variables (Institution and Class level= on five engagement attributes found in the SES questionnaire.

Because the normality assumption and homogeneity of the covariance matrix assumption were violated, it was decided to use Pillai's Trace statistic to interpret the results, following the recommendation of Ateş et al. (2019).

Interaction effects, were significant, Pillai's Trace V = .015, $F(5, 1080) = 3.303$, $p < .05$, multivariate $\eta 2 = .015$, which suggested that class-level differences in engagement attributes depended on the institution students attended. The main effects were evaluated using an $\alpha = .001$. The results suggested that the main effect of the class level was nonsignificant, Pillai's Trace V = .012 $F(5, 1080) = 2.52$, $p > .05$, multivariate $\eta 2 = .012$, which seems to suggest that the class level does not have a significant influence.

However, the main effect of the institution was significant, Pillai's Trace V = .191 $F(5, 1080) = 50.87$, $p < .001$, multivariate $\eta 2 = .019$, which suggested that the institution had indeed a significant influence on the difference in scores in the engagement attributes we evaluated. A post hoc analysis using a Bonferroni correction showed significant differences in engagement attributes between the American and the Bolivian universities, as shown in Table 1.

Table 1. Pairwise Comparisons. Two Groups: U.S. and Bolivian Universities.

Country		Mean Differences	SE	p-value
USA - Bolivia	Academic Effort	.326	.029	<.001
USA - Bolivia	Interaction	.665	.044	<.001
USA - Bolivia	Higher order learning	.360	.036	<.001
USA - Bolivia	Supportive environment	.334	.044	<.001
USA - Bolivia	Involvement	.043	.020	<.001

5. Discussion

The purpose of this study was to determine whether the differences in means among the five engagement attributes identified in the SES could be explained by the differences in institutions and class levels. A two-by-two factorial MANOVA determined that the interaction effects were significant, suggesting that the differences in scores between freshmen and sophomores depended on the institution they attended. Because the interactions were ordinal, the main effects of institution and class level were also interpreted.

The study found that the institution variable had a significant effect on the scores of the five engagement attributes. Nearly 20% of the score difference can be attributed to differences among institutions ($\eta 2 = .019$). This is important because it suggests that the efforts of institutions do have an impact on student engagement in Bolivian universities. A pairwise comparison suggested that this is true for each of the engagement attributes studied.

When analyzing the main effect of the variable "class level," the study found that there was no statistically significant difference in engagement scores between freshmen and sophomores. Therefore, it can be concluded that the institutional environment has a greater influence on students' engagement than their class level.

6. Limitations and Future Research

Due to the COVID-19 pandemic, the 2020 academic year was different than usual, and students were unable to participate in normal classroom experiences and campus life. Classes were conducted online during the lockdown, which may have affected student engagement. The study was conducted during this time, and although the results may be influenced by the pandemic, the comparison between the two populations is still relevant as they both faced the same challenges. One limitation of this study is that it only considers two factors to explain the difference in engagement scores between two populations, so other variables should be included to obtain a more comprehensive understanding of student engagement in higher education institutions.

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