Satisfaction and Academic Engagement among Undergraduate Students: A Case Study in Istanbul University

Burcu Özge Özaslan Çalışkan^a, Burcu Adigüzel Mercangöz^b

^a Istanbul University, School of Transportation & Logistics, Istanbul, 34320, Turkey

^b Istanbul University, School of Transportation & Logistics, Istanbul, 34320, Turkey

Abstract

Academic engagement used to refer to the extent to which students identify with and value schooling outcomes, and participate in academic and non-academic school activities. This study aims to investigate the academic engagement and satisfaction from the school among the university students. The data is taken from the undergraduate students in School of Transportation & Logistics in Istanbul University. We used a questionnaire that consisted of two parts. First part of the questionnaire is about to measure the students' academic engagement that is improved by Schaufeli et al. Second part of the questionnaire is about to measure the students' satisfaction from the school. K-means cluster analysis is used to determine two groups of students, group the students in to two clusters based on their school satisfaction scores. We named these two groups as "satisfied" and "unsatisfied" students. Secondly we investigate the relationships between the satisfaction scores and the academic engagement. By means of T Test we investigate whether the academic engagement differs between the clusters that are determined according to the students' satisfaction scores. Finally we found that academic engagement differs according to the identified clusters.

Keywords: Academic Engagement, Clustering Analysis, School Satisfaction

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1. Introduction

In the last few decades, work engagement concept has become very popular. Organizations are willing to increase the performance of their employees. Researches are trying to develop new relations to increase the success in worklife. In many cases, engagement is being held according to its relationship with some issues such as burnout, motivation, goal conflict and satisfaction etc. Furthermore it is identified that engaged employees are highly energetic, self-efficacious

^a Corresponding author. Burcu Özge ÖZASLAN ÇALIŞKAN, Tel.: +90 473 70 70 (19238).

individuals who exercise influence over events that affect their lives (Bakker et al. 2011). On the other hand, work engagement is adapted to the education life with a concept called “academic engagement”. Academic engagement is seemed to have a critical importance for being successful in academic life. Students are engaged when they are involved in their work, persist despite challenges and obstacles, and take visible delight in accomplishing their work (Saeed, S., & Zyngier, D.,2012). Student engagement also refers to a "student's willingness, need, desire and compulsion to participate in, and be successful in, the learning process promoting higher level thinking for enduring understanding (Saeed, S., & Zyngier, D.,2012). There are different engagement scales used to investigate the academic engagement. One of the most useful scale is developed by Utrecht. For academic engagement Schaufeli et al. modified Utrecht's engagement scale for students. In this scale engagement was assessed with the 14-item scale that is a modified version of (Utrecht Work Engagement Survey) UWES by Schaufeli et al., 2002. The scale includes three subscales: Vigor (VI; 5 items), Dedication (DE; 5 items), and Absorption, (AB; 4 items). Vigor is characterized by high levels of energy and mental resilience while working, the willingness to invest effort in one's work, and persistence also in the face of difficulties. Dedication is characterized by a sense of significance, enthusiasm, inspiration, pride, and challenge and absorption by being fully concentrated and happily engrossed in one's work, whereby time passes quickly and one has difficulties with detaching oneself from work (Schaufeli, et al., 2002b). Absorption refers to the state in which one is highly concentrated and happily engrossed in works so that s/he feels time passes quickly and it is difficult to detach from work (Basikin, 2007).

The present research concentrates on the relationships between academic engagement and satisfaction of university students from their school. The first aim of this study is to explore how students can be classified according to their satisfaction level by using K-Means Cluster Analysis. By means of T Test we investigate whether the academic engagement differs between the clusters that are determined based on the students' satisfaction scores.

2. Literature Review

As we review the literature, it is seen that when students are engaged in college experiences, it was more likely that student learning, retention, and a quality undergraduate experience as outcomes occurred. In what has become a widely cited piece on retention, the central premise of model was that students' decisions to persist or withdraw from college depend on their successful academic and social integration within the college (Umbach & Wawrzynski, 2005). Umbach and Wawrzynski 2005 used two national data sets to explore the relationship between faculty practices and student engagement. Their findings suggest that students report higher levels of engagement and learning at institutions where faculty members use active and collaborative learning techniques, engage students in experiences, emphasize higher-order cognitive activities in the classroom, interact with students, challenge students academically, and value enriching educational experiences.

Zhao and Kuh 2004 examined the relationships between participating in learning communities and student engagement in a range of educationally purposeful activities. The findings indicate that participating in a learning

community is positively linked to engagement as well as student self-reported outcomes and overall satisfaction with college.

Roebken 2007 used data on 2009 college student and the influence of goal orientation on student satisfaction, academic engagement and achievement was examined in the study. The results support the notion that students pursuing both mastery and performance goals are more satisfied with their academic experience, show a higher degree of academic engagement and achieve better grades than students who pursue a mastery orientation alone or a work-avoidance/performance orientation. Carini, Kuh and Klein 2006 examined the extent to which student engagement is associated with experimental and traditional measures of academic performance, whether the relationships between engagement and academic performance are conditional, and whether institutions differ in terms of their ability to convert student engagement into academic performance.

The results suggest that the lowest-ability student's benefit more from engagement than classmates, first-year students and seniors convert different forms of engagement into academic achievement, and certain institutions more effectively convert student engagement into higher performance on critical thinking tests.

3. Methodology

The first aim of this study is to investigate the satisfaction and academic engagement level among the students in School of Transportation & Logistics at Istanbul University. Secondly, it is tried to be determined wheather the academic engagement scores are significantly differs according to the satisfaction scores. The dataset of the study has been obtained from the survey which is conducted on the undergraduate students at School of Transportation & Logistics in Istanbul University. The dataset has 166 records.

K-Means Clustering Method:

The k-means method aims to minimize the sum of squared distances between all points and the cluster centre. By using using k-means cluster analysis, two groups of students are established based on their school satisfaction scores. Cluster distribution is shown in Table.3. Regarding to the means of the satisfaction scores shown in the Table.3, we named the first cluster as "Unsatisfied" and the second cluster as "Satisfied".

Table 3. Classifying Satisfying Scores

Means of Satisfaction Scores	N	Mean	SD	Std. Error Mean
1	67	2,5448	0,63564	0,07766
2	99	3,7205	0,52119	0,05238

We used a questionnaire that is improved by Scahaufeli in order to investigate the students' academic engagement. Also we improved a scale in order to investigate the student's satisfaction from their school. The scales are explained below:

Scales used in the study:

Academic Engagement Scale: We used the engagement scale of Utrecht that is a modified by Schaufeli et al. for investigating the students' engagement scores. 14-item scale includes three subscales: Vigor (VI; 5 items), Dedication (DE; 5 items), and Absorption, (AB; 4 items). The 5 items are about to measure the "vigor" dimension, that consists questions related to the students' energy and willingness to school activities. Dedication is characterized by 5 items about sense of significance, enthusiasm, inspiration, pride, and challenge. The dimension of absorption is measured by 4 items and the questions refer to the state in which one is highly concentrated and happily engrossed in school.

Satisfaction from the School Scale: We developed a scale to measure the students' satisfaction from their school. We ask those questions about their friendships in the school, their relations and perceptions of the teachers, satisfaction of school facilities and the "corporate reputation". The developed item for identifying the satisfaction from the school is a 14 item scale that is on a seven point likert scale. According to the principal factor analysis we found that the scale has 4 subscales can be named as "relation with friends"(3 items), "relation with teachers" (5 items),, "satisfaction from facilities" (4 items), and "corporate reputation" (2 items). Also according to the KMO and Barlett's Test results shown in Table.1, we can see that the data is available for the factor analysis. The factors had reliabilities of alpha is equal to 0,76. The total variance of explained by 4 subscale is 61,40 (Table.2).

Table.1. KMO and Barlett's Test Results

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0,734
Bartlett's Test of Sphericity	680,145
Approx. Chi-Square	91
df Sig.	0,000

Table. 2. Total Variance Explained

Compo- Net	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	3,643	26,021	26,021	3,643	26,021	26,021	2,771	19,796	19,796
2	2,330	16,643	42,664	2,330	16,643	42,664	2,086	14,901	34,696
3	1,530	10,929	53,593	1,530	10,929	53,593	2,004	14,312	49,008
4	1,093	7,806	61,399	1,093	7,806	61,399	1,735	12,391	61,399

Hypothesis of the Study:

H1: The satisfaction scores are significantly differs according to the identified clusters.

H2: The students' academic engagement scores are significantly differ according to the identified clusters.

H3: Mean of Vigor dimension is significantly differs according to the the identified clusters.

H4: Mean of Dedication dimension is significantly differs according to the the identified clusters.

H5: Mean of Absorption dimension is significantly differs according to the the identified clusters.

4. Results and Discussions

H1: The satisfaction scores are significantly differs according to the identified clusters.

By means of Independent T Test, it was first determined whether whether the satisfaction scores are significantly differ according to the identified clusters. The results showed that the mean of satisfaction scores of the students significantly differs according to the identified clusters. The students who named as “satisfied” has higher mean of the satisfaction scores.

Table.4. Independent Samples T Test's Results

	Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Means of Equal Satisfaction variances assumed Scores	2,301	,131	-13,038	164	,000	-1,17573	,09018	-1,35378	-,99767
			-12,552	122,626	,000	-1,17573	,09367	-1,36115	-,99031

Investigating the Identified Clusters' Academic Engagement Levels

By means of Independent Samples T Test, it was determined whether the students' academic engagement and subscale scores were significantly differs according to the identified clusters. The results are shown in Table.5.

Table 5. T Test Statistics & Means of the Clusters

Academic Engagement Subscales	Clusters	n	X	Sd	Sig
Mean of Vigor	Unsatisfied	67	2,09	1,413	0,000
	Satisfied	99	2,96	1,096	0,000
Mean of Dedication	Unsatisfied	67	2,66	1,653	0,000
	Satisfied	99	3,48	1,172	0,000
Mean of Absorption	Unsatisfied	67	2,78	1,229	0,000
	Satisfied	99	3,44	0,962	0,000
Mean of Academic Engagement	Unsatisfied	67	2,51	1,239	0,000
	Satisfied	99	3,30	0,906	0,000

H2: The students' academic engagement scores are significantly differ according to the identified clusters.

It can be seen from the Table.5 that the students' academic engagement scores are significantly differ according to the identified clusters. That means students having higher means of satisfaction scores are more engaged that the students have lower satisfaction scores.

H3: Mean of Vigor dimension is significantly differs according to the the identified clusters.

We can see that the academic engagement scores are significantly differs according to the identified groups. As we look over the "vigor" that is characterized by high levels of energy and mental resilience while working, the willingness to invest effort in one's work, and persistence also in the face of difficulties, is significantly differs according to the identified clusters. Non satisfied groups "vigor scores" are lower than satisfied student's scores.

H4: Mean of Dedication variable is significantly differs according to the the identified clusters.

As we look over the "dedication" that is characterized by a sense of significance, enthusiasm, inspiration, pride, and challenge and absorption by being fully concentrated and happily engrossed in one's work, whereby time passes quickly and one has difficulties with detaching oneself from work, is significantly differs according to the identified clusters. Non satisfied groups "dedication scores" are lower than satisfied student's scores.

H5: Mean of Absorption variable is significantly differs according to the the identified clusters.

As we look over the "Absorption" that is characterized by being fully concentrated and deeply engrossed in one's work, whereby time passes quickly and one has difficulties with detaching oneself from work (Schaufeli et al., 2002), is significantly differs according to the identified clusters. Unsatisfied groups "absorption scores" are lower than satisfied student's scores. Unsatisfied students' engagement scores are significantly lower than the satisfied students.

5. Conclusion

The findings have theoretical as well as practical implications. With regard to the results, we can say that all of our hypotheses are proved. Satisfaction from the school is an important variable in academic engagement. Students satisfied from their school are more engaged.

When we look at the dimensions of the satisfaction scale, it is important for the students that they know they are being equal valued by their teachers, contact to them easily, their knowledge and being rewarded for their participation to the class. Dimension about "corporate reputation" is being proud to be a partner of that school, and find it higher than the other schools. Dimension about the facilities in the school can be supported by the administration with having more

places for the students to have food, make sport technological improvements for their researches and social activities. If the administrators, professors and other instructors wish to improve the achievement levels and general satisfaction of their students, they may be well advised to make these improvements. Therefore, knowledge on how satisfaction develops, changes and how it affects academic engagement will be tremendously useful to everybody who is involved in shaping and improving the academic learning environment.

There are unfortunately some limitations of this study. The data used was collected from only one school. This can be spread to other departments of the university. Also the sample in this study was limited to college students, it is necessary to broaden the age spectrum of participants.

For the future researches, the relationship between demographic variables, students' some specialties and characteristics can be investigate.

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