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Developing a Student Satisfaction Index and a Strategic Management Map for Turkish Higher Education

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ABSTRACT

This research aims to examine student satisfaction at higher education institutions through the estimation of a student satisfaction index (SSI) by simultaneously building a strategic management map (SMM) to help higher education leaders identify the areas for improvement at their institutions during Covid-19 induced hybrid education in Turkish Higher Education. The research was carried out with university students at a well-known foundation university in Turkey during Covid-19 pandemic. American Customer Satisfaction Model (ACSI) was used as a lens of analyisis to demonstrate the causal relationship between the antecedents and consequences of student satisfaction in Turkish Higher Education. The partial least squares (PLS) estimation was employed to test the model and obtain the SSI score. Given the complex nature of student satisfaction and loyalty, the model was found to adequately predict overall student satisfaction and loyalty. SSI score of 64.95 was found to be lower than the weighted average of all sectors in the United States in 2021. The SMM that was built to examine the relative importance of each quality attributes demonstrated that the perceived utility/benefit and interactional/process-based quality attributes have the greatest positive influence on satisfaction score. The research contributed to the discussion on quality perceptions by highlighting the significance of perceived utility/benefit and interactional/process-based quality attributes over the core/hygiene factors in quality construct. The research also contributed to the discussion on the relationship between satisfaction and complaining behavior by proving that the relationship it is not necessarily negative but contingent on the number of different factors.

Keywords:
Student satisfaction index, strategic management map, Covid-19 pandemic, higher education

1. Introduction

The purpose of this study is to develop an index for student satisfaction model for Covid-19 induced hybrid education by using American Customer Satisfaction Index (ACSI) which was originally developed by Fornell (1992) as a lens of analysis. A Strategic Management Map (SMM) was built on the student satisfaction index (SSI) to assist higher education leaders to identify the areas for improvement at their institutions. The ACSI model was built on two well-established theories: 1) the quality, satisfaction and performance paradigm and 2) Hirshman's (1970) the exit-voice theory (Hsu, 2008). The model depicts a cause-and-effect relationship running from the primary drivers of overall satisfaction (customer expectation, perceived service quality, and perceived value) to its consequences (customer loyalty and customer complaint). Throughout the literature you may come across several variations of the model adapted for different contexts. This study utilizes two different variations of the model: 1) e-CSI developed for online shopping by Hsu (2008) and 2) augmented variation of Serenko (2011) which was developed for Canadian higher education. Unlike the conventional model, in the e-CSI model, the construct of customer expectation was removed and replaced by the construct of trust. Hsu (2008) also replaced the construct of service quality by e-service quality and introduced one

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additional relationship from trust to customer loyalty. In Serenko's (2011) variation which was developed for educational settings, the model was augmented by the introduction of tuition change tolerance (TCT) and word of mouth (WOM) as the consequences of SS. On the other hand, Customer Expectation (CE) was changed as Perceived Expectation (PE), Customer Satisfaction (CS) as Student Satisfaction (SS), Customer Loyalty (CL) as Perceived Loyalty (PL), and Customer Complaint (CC) as Student Complaint (SC).

Other than Serenko's (2011) study where the American Customer Satisfaction Model (ACSM) was adapted for Canadian higher education, so far no study utilized ACSM as a lens of analysis in the context of higher education. Moreover, so far there has been no attempt to test and validate an index for student satisfaction that facilitates a systematic benchmarking over time and across institutions in Turkish higher education. This model can also serve a diagnostic tool to suggest why students are satisfied or dissatisfied with their institution; whether the institution handles the SCs effectively or not; how the institution can improve SS; how effective the efforts of the institution are at improving SS; and where the institution stands on SS relative to its competitors at the higher education. Therefore, this study is both theoretically and practically important.

1.1. SSI Model

American Customer Satisfaction Model (ACSM) was used as a lens of analysis for this study. The SSI model which will be tested for Turkish higher education was adapted utilizing the two different variations of ACSM (adaptation of ACSI by Serenko (2011) and adaptation of ACSI by Hsu (2008)). It focuses on three key antecedents: perceived trust (PT), perceived quality (PQ) and perceived value (PV); and two consequences: student complaints (SC) and student loyalty (SL). Following the footprints of Hsu (2008), customer expectation was removed and replaced by perceived trust (PT) and one additional relationship from trust to SL was introduced into the model. In the model, CS was replaced by SS, and CL was replaced by SL and CC was replaced by SC.

Perceived Quality: Johnston (2010) argues that in the field of higher education, students' choice of university is influenced by a variety of factors, the most important of which is the perceived quality of the programme. PQ has been considered to be one of the leading drivers of CS (Ha & Janda, 2008) and also recognized as an important driver of SS (Athiyaman, A. 1997; Cheng et al., 2016; Dericks et al., 2019; Mwiya et al., 2017; Naylor et al, 2021).

It is believed that PQ may accurately explain SS, because students who perceive PQ as high are also likely to become more satisfied with the programme (Serenko, 2011). PQ includes variety of factors from how qualified professors are to how prestigious the university is perceived in the community (Mestrovic, 2017; Polat et al, 2016; Polat, 2015). Yet the student interactions with educational environment are the most important indicator of PQ that contributes to SS (Stukalina, 2012). Considering the fact that students and educational institutions are engaged in a value exchange relationship, students exercise their choices by selecting the educational institutions that best meet their personal needs and expect their institution to meet certain level of quality (Serenko, 2011) and if their choice of university fails to meet those expectations, students become dissatisfied with the experience (Arat, 2011; Ewell, 1989).

Consistent with prior research, in SSI model, it was hypothesized that favorable student experience with PQ leads to high SS. PQ is also expected to have a positive effect on PT, because favorable PQ can increase the perceived trust in a service provider (Hsu, 2008). Also, consistent with prior research, those who perceive the quality more favorably also find it of higher value (Fornell et al., 1996). Therefore the following hypothesises will be tested.

Hypothesis 1. PQ affects PT positively.

Hypothesis 2. PQ affects PV positively.

Hypothesis 3. PQ affects SS positively.

Perceived Trust: Trust is vitally important for all economic activities (Hsu, 2008) and one of the three major components of social capital which promotes the ability of people to work together for common purposes in organizations (Hamilton et al., 2016; Fukuyama, 1999; Garbarino & Johnson, 1999). This situation is even more apparent in the case of educational institutions that engage in value exchange relationships. After all, enrolling an educational institution is a long-term commitment that will affect the whole life. The lack of direct methods

to judge ethical commitments of an educational institution and the time lag between the enrollment and graduation make students even more sensitive to the issues of trustworthiness in their exchange with the educatiobal institution. Thus, the importance of trust in education can never be exaggerated.

Trust (together with social networks and norms of reciprocity) is also considered as an important antecedent of CS that, in turn, promotes CL (Castañeda, 2011; Chiou, 2004; Dehghanpouri, 2020). Gefen et al. (2003) argue that trust initially helps attract new clients and later preserve the existing ones. In a similar way, trustworthiness of the educational institutions helps them attract new students, ensure student enrollment and then keeps the students in the system until graduation (Latif et al., 2021). Lack of trust, on the other hand, is one of the most frequently cited reasons why most students do not even consider some higher education institutions as an alternative when selecting a specific education service provider or stay in the system until graduation (Chen, 2017). Trust to the institution is therefore perceived as an essential resource that contributes to SS and SL. Hence, the SSI model utilizes trust as an antecedent to SL and SS.

PT directly affects loyalty and satisfaction by reducing the uncertainity of value exchange relation between the university and the students, but it also affects them indirectly through PV by adding relational benefits that are derived from interaction (Chiou, 2004). Therefore, in SSI model, it was hypothesized that trust has a positive impact on SL, SS and PV.

Hypothesis 4. PT affects SL positively.

Hypothesis 5. PT affects SS positively.

Hypothesis 6. PT affects PV positively.

Perceived Value: PV refers to the PQ relative to the price paid (Fornell et al., 1996). Prior research indicated that PV is an important predictor of overall satisfaction and customer loyalty and can be defined as a trade-off between the benefit received and the cost incurred (Hsu, 2008). Likewise, Parasuraman et al (1984) define PV as the favorable perception of the utility of a service based on what was received and what was given. Serenko (2012) argues that by bringing a price dimension, PV achieves to assess PQ relative to the tuition paid; and doing so it plays two major roles: First, it controls for budget and income differences; and second, it facilitates systematic comparisons and benchmarking.

Hence, a superior value relative to competitors and a favorable assessment of a trade between what was received and what was given (Jiang, 2016; Kusumawati & Rahayu, 2020) is expected to have a favorable effect on SS. Therefore, it was hypothesized that

Hypothesis 7. PV affects SS positively.

Student Loyalty: SL has long been considered as the major consequence of SS and the major driver of improved profits. Loyal students are more likely to express their satisfaction to others, engage in favorable word-of-mouth more and are less likely to leave their current institution (Anderson, 1998; Serenko, 2011). Most importantly, satisfied and loyal students become more willing to invest into their relationship with their institutions over time, leading to increased enrollments and improved profits for the institution (Kalia et al., 2021; Kaur & Soch, 2018). On the other hand, overall dissatisfaction may dramatically increase the probability of disenrollment even close to graduation (Braxton, 2019; Lint, 2013).

According to Fishman et al. (2017), the path to university graduation is more uncertain than ever: Nearly one-third of undergraduates leave after their first year and many transfer to other institutions. No longer does the typical student come to university straight from high school and stay there until the graduation. Especially after the digitalization and standardization efforts in education, students are more mobile than ever. Acquiring students is enormously hard and unless those students stick around and stay there until graduation, profits will remain unpredictable for many higher education institution. Considering the fact that number of people holding a master or PhD degree or the professionals who pursue multiple degrees will increase tremendously, turning students into loyal ones has never been more important for universities.

Hence, all these new trends and future projections indicate that assuring student loyalty, positive word-of-mouth and lower marketing expenditures are more important than ever in higher education for improved profits. We, therefore, expect to see a positive relationship between SS and SL.

Hypothesis 8. SS positively affects SL.

Student Complaints: SC measures how often students have ever formally or informally expressed a concern about their programme experience (Serenko, 2011). In the case of unsatisfactory experience, students are expected to make their complaints officially or unofficially (Bearden & Teel, 1983). Lala and Priluck (2011) argue that dissatisfaction is the one of the main reasons for complaining behavior and imply that the relationship between SS and SC should be negative. However, there are also other studies suggesting the otherwise (e.g. Ping, 1997).

At the first sight, high SS might suggest a low level of SCs. However, one should never disregard the fact that dissatisfied customers have another alternative as to exit the relationship (Hirschman, 1970). So, especially when the perceived switching cost is low, dissatisfied customers might just exit the relationship without bothering to complain. In line with this thinking, complaining customers might still be the ones who are still satisfied. Therefore, observing a positive relationship between SS and SC is quite possible. On the other hand, if the perceived switching cost is too high, then the dissatisfied students would have no chance but to complain. Then, the complaining behavior would result in a negative relationship between student SS and SC.

It is also important to note that satisfied customers might not instantly switch to another institution after experiencing a problem (Hsu et al., 2006). This might not be just because the perceived costs of exiting the current relationship are relatively high but because they sincerely believe that their complaints will be dealt with attentively and problems will not remain unsolved. This implies that complaining students may still be the satisfied students who are believing that they can make a difference in their universities by seeking solutions for their complaints. To sum up, the relationship between SS and SC is complex and depends on several factors: 1) the behavior of the dissatisfied students and 2) the anticipation of students about how the complaints will be received and dealt by the university. So, it was hypothesized that

Hypothesis 9. SS might have a negative or positive relationship with SC.

The association between the complaint levels and loyalty mostly depends on the organization's complaint-handling capabilities (Hsu, 2008). Positive association between the complaint levels and loyalty might suggest that the organization is successful in turning complaining customers into loyal customers and vice versa (Fornell, 1992; Hsu, 2008). Hence, SSI model proposes that

Hypothesis 10. If the association between SC and SL is negative, then the university fails to turn complaining students into loyal students and vice versa (Serenko, 2011).

2. Methodology

2.1.Research Design

It is a cross-sectional quantitative investigation. As the problem addressed by this study concerns the understanding of the relationship between the key drivers of SS (including PT, PV and PQ), and the key outcomes of SS (SC and SL), an explanatory (hypothesis testing) type of research design was preferred in this study.

2.2. Data Collection Procedure

An on-line survey was administered to 416 undergraduate and graduate students at one of the most well-known foundation universities in Turkey in 2020-2021 spring semester during the Covid-19 induced hybrid education.

2.3. Data Collection Tools

A 25-item, 10-point Likert scale was designed to test the constructed hypothesis. Whenever possible, previously tested items were used. To address face validity, items are reviewed by several academics and minor adjustments were made both on the format and the content. A preliminary survey was tested with 10 graduate students from another private university. After several refinement the survey was finalized.

PQ was measured by 10 items. In this research, quality was considered to have three main aspects: core/hygiene aspects; interactional/process aspects and perceived utility/benefit aspects. Items for this construct were developed in a focus group composed of 10 graduate students and a list of 10 items were

identified. Academic staff credentials, educational infrastructure, international experience, second language acquisition were grouped under the core/hygiene aspect (4 items); campus location, campus facilities, industry-university cooperation and interpersonal interactions with the faculty were grouped under interactional/process aspect (4 items); lastly, local employability and global employability were grouped under perceived utility/benefit aspect (2 items). PT was measured by two items which were adopted from the study of Gefen et al (2003) and re-worded to fit into higher education context as ''caring about student needs" and ''trustworthiness". PV was measured by two items which were adapted from the study of Serenko (2011) "tuition paid relative to programme quality" and "programme quality relative to tuition paid". SS was measured by three items which are adapted from the study of Fornell et al. (1996): (1) Overall satisfaction (2) Satisfaction compared with expectation and (3) Satisfaction compared with one's ideal experience. SC was measured by whether a student expressed a concern formally or informally when were dissatisfied (Serenko, 2011). This study proposed that SL has three dimensions: positive student predisposition towards the programme (SPP), tuition change tolerance (TCT) and positive word of mouth (WOM). All the measures of SPP, WOM and TCT were adapted from the study of Serenko (2011). Positive SPP was measured by two items: (1) likelihood of a student repeating the same choice by enrolling in the same programme again, and (2) students' positive opinion about the rightfulness of their choice in selecting a specific service provider (Serenko, 2011). TCT is related to two types of switching costs: transactional and learning costs (Willis et al, 2007 as cited in Serenko, 2011). Transactional costs are associated with financial costs incurred when a student has to move to another place (e.g. exstra expenses or interruption in employment) and the learning costs are associated with the inconveniences of becoming a transfer student (e.g. a transfer students are more likely to exert more effort to adapt to a new university, take exstra courses not offered by his/her previous university, or learn a new culture, values and programme structure) (Serenko, 2011). TCT was measured based on two items: (1) likelihood of a student staying in the programme despite an increase in its tuition, or (2) likelihood of a student transferring to a rival programme if it offers a discount in its tuition (Serenko, 2011). WOM was measured based on three items: (1) tendency to tell a favorable opinion about the programme to others (Browne et al, 1998 as cited in Serenko, 2011) and (2) the likelihood of suggesting the programme to others or (3) encouraging others to apply to this programme (Serenko, 2011).

2.4. Data Analysis

The partial least squares (PLS) estimation (using SmartPLS 3.3.2) was used to test the measurement model and to estimate the predictive power of the theoretical model. PLS has several strengths that made it appropriate for this study. First, PLS is effective at handling both reflective and formative constructs. Second, PLS is effective when the data exhibits non-normality, and third, PLS is effective when the sample size is small. Most importantly, in a PLS estimation, estimated weights can be utilized to derive index scores that facilitates a systematic comparison over time and across institutions (Hsu, 2008).

2.4. Ethical

The ethics committee approval for this study was obtained from Bahçeşehir University's Committee on Scientific Research, and Publication Ethics with the decision numbered 01/02/2021_E.1170.

3. Findings

In a PLS estimation, construct indicators must be specified as either formative or reflective. While the reflective measures are the items that represent the consequences of the construct under study, formative measures represent the items that affect the construct under study (Diamantopoulos & Siguaw, 2006). Since the PQ has three different dimensions that strive to cover the construct domain fully by different indicators with minimum overlap, the indicators of PQ were treated as formative measures. The indicators of other constructs, on the other hand, were treated as reflective measures as the aim is to maximize the overlap between different indicators (Diamantopoulos & Siguaw, 2006).

3.1. Measurement Model

In order to validate the measurement model, item reliabilities for all formative constructs including PT, PV, SSI, SL, and SC were estimated by outer loadings and the outer weights were obtained in order to determine the significance and the relevance of the formative indicators for PQ (see Table 1). As can be seen on Table 1, all item loadings explained over 50% of variance in their respective reflective constructs, and therefore were

retained in the measurement model. Since all the outer weights were significant, no items were removed from the formative indicators for PQ.

Table 1. *Items Statistics*

	Mean	Loadings (Weights)
PQ-Formative Indicator		
PQ1- Academic staff credentials (core aspect)	7.49	(0.08)
PQ2- Educational infrastructure (core aspect)	8.08	(0.06)
PQ3- International experience (core aspect)	8.45	(0.02)
PQ4- Second language acquisition (core aspect)	6.92	(0.11)
PQ5- Campus location (process aspect)	7.83	(0.23)
PQ6- Campus facilities (process aspect)	6.78	(0.14)
PQ7- Industry-university cooperation (process aspect)	7.89	(0.17)
PQ8-Interpersonal interactions with the faculty (process aspect)	8.09	(0.21)
PQ9- Local employability (utility aspects)	8.02	(0.18)
PQ10- Global employability (utility aspects)	7.56	(0.27)
PT-Reflective Indicators/Internal Consistency=0.89		
PT1-caring about students' needs	7.46	0.90
PT2-trustworthiness	7.34	0.89
PV-Reflective Indicators/Internal Consistency=0.94		
PV1- tuition paid relative to programme quality	7.11	0.93
PV2- programme quality relative to tuition paid	6.98	0.94
SSI-Reflective Indicators/Internal Consistency=0.88		
SSI1-Overall satisfaction	6.58	0.88
SSI2-Satisfaction relative to expectation	7.10	0.90
SSI3-Satisfaction relative to an ideal experience	6.96	0.92
SC-Reflective Indicators/Internal Consistency=1	6.68	1
SC-formal/informal student complaint		
SL- Reflective Indicators/ Internal Consistency=0.71		
SL1- likelihood of enrolling in the same programme again	7.58	0.68
SL2- student perceptions of whether they made a right choice	8.14	0.73
SL3- likelihood of continuation despite an increase in tuition	6.62	0.70
SL4- likelihood of transferring to a rival if it offers a discount in tuition	7.32	0.69
SL5- expressing a positive opinion about the experience	7.56	0.65
SL6- likelihood of recommending the experience	7.80	0.68
SL7- encouraging others to apply to the programme	7.74	0.75

In order to assess the internal validity, Cronbach's alpha has been employed for reflective constructs. Table 1 shows that all internal consistency reliability measures of each reflective construct were above the threshold level of 0.70 (see Table1). For the formative construct of PQ, on the other hand, Cronbach's alpha was not calculated as the indicators of a formative construct neither need to correlate nor represent a single sub-dimension. Instead, the weight of each item was calculated to assess how much it contributes to the overall factor (Chin, 1998).

Discriminant validity measures the extent to which a given construct is different from all other constructs. To assess discriminant validity, Fornell and Lacker (1981) suggest the use of Average Variance Extracted (AVE). For adequate discriminant validity, the diagonal entries in the correlation matrix (see Table 2) must exceed the inter-construct correlations.

As can be seen from the Table 2, all diagonal values are greater than the off-diagonal values in the correlation matrix confirming that all constructs had adequate discriminant validity.

Table 2. *Correlation Matrix for Discriminant Validity*

Latent Variables		1	2	3	4	5	6
1.	PQ	0.71*					
2.	PT	0.69	0.86*				
3.	PV	0.63	0.72	0.93*			
4.	SSI	0.65	0.68	0.81	0.83*		
5.	SL	0.53	0.59	0.77	0.79	0.75*	
6.	SC	0.21	0.27	0.33	0.36	0.26	1*

* Diagonal entries are square roots of Average Variance Extracted (AVE)

3.2. Structural Equation Model

In order to test the goodness of the predictive model, path coefficients and R^2 values were examined by PLS method. The path coefficients show the strengths of the relationships between the constructs. R^2 values, on the other hand, indicate the amount of variance explained by the independent constructs.

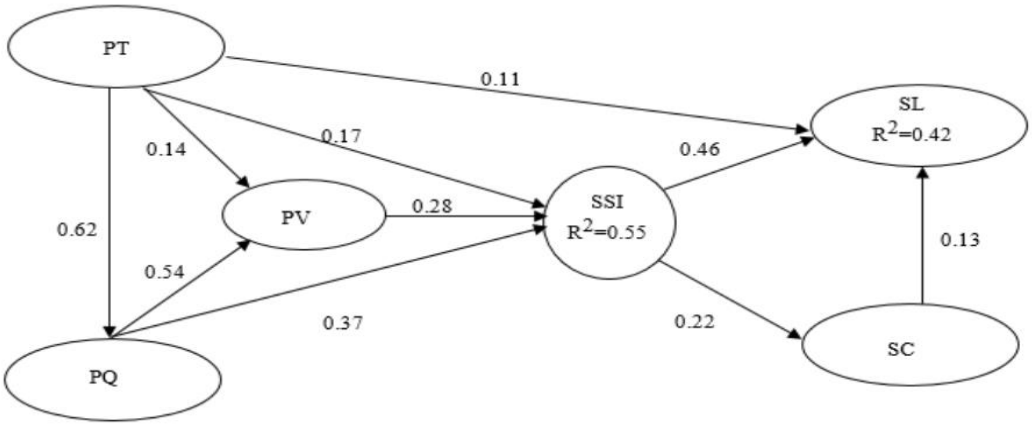

Figure 1. *The Structural Model* (Note: All links are significant at 0.05).

The theoretical model explained 55% of the variance in SS. On top of it, the model captured 42% of the variance in SL. Considering the number of factors that may affect SS and SL, the amount of variances explained by the model is adequate enough.

To test the path significance, bootstrap analysis was performed. All the path estimates were found to be statistically significant (see Fig.1). PQ showed a positive effect on PT ($b = 0.62$, $p < 0.05$), PV ($b = 0.54$, $p < 0.05$), and SSI ($b = 0.37$, $p < 0.05$). PT was found to have positive effect on SL ($b = 0.11$, $p < 0.05$), SSI ($b = 0.17$, $p < 0.01$) and PV ($b = 0.14$, $p < 0.05$). PV had a positive effect on SSI ($b = 0.28$, $p < 0.05$). SSI was found to be positively associated with SL ($b = 0.46$, $p < 0.05$) and SC ($b = 0.22$, $p < 0.05$). The path coefficient from SC to SL is positive and statistically significant ($b = 0.13$, $p < 0.05$). This implies that the university was effectively handling student complaints which meant that complaining students indeed turn into loyal ones.

It is also interesting to note that SSI has a positive relationship with SC. As discussed in the literature section, there might be several explanations for this specific finding which is contrary to the conventional thinking. However, apart from all the possible explanations provided in the literature section, this finding which is contrary to the conventional thinking might have more of a case-specific explanation. Since the data was collected during Covid-19 induced hybrid education, complaining students may still be the satisfied students who believe that the problems are quite normal for such an extraordinary situation and tend to be more tolerant to problems because they believe that their complaints will be held attentively and sincerely for students' best interests.

To examine the effects of antecedent constructs on SSI, the total effect of each construct (e.g., the total effect of PT on overall SSI = [PT on overall SSI] + [trust on PV] · [PV on SSI]). The total effects of PQ, PT, and PV on overall SS are 0.52, 0.21, and 0.28, respectively. Accordingly, PQ has the greatest impact on overall SS. The R^2 values for overall SSI, SL and SC are 0.55, 0.42 and 0.07. Given the complex nature of SSI, SL and SC, the results can be considered as adequately high.

In order to facilitate the comparison among different educational institutions, across different sectors and over time, a SSI score was derived from the model with the following formula:

$$SSI = \frac{\sum_{i=1}^{n} w_i . \bar{x}_i - \sum_{i=1}^{n} w_i}{9 . \sum_{i=1}^{n} w_i} * 100$$

where *wi* is the non-standardized weight of the *i*th item from the measurement model generated by PLS, $\bar{x}i$ is the average of the *i*th item loading on the SS construct and n is the number of measurement variables (Anderson & Fornell, 2000). Using the formula, the SSI score was found to be 64.95 on a scale of 1-100. This score is lower but not too much lower than the weighted average in the United States in 2021[2] (National ACSI score = 75.30).

3.3. Strategic Management Map (SMM)

Examining the relative contribution of each quality item on SS is critically important as it encourages the educational institutions to address the quality issues from the students' viewpoint. To achieve this aim, the importance and contributions of each quality attribute on satisfaction score were estimated and a SMM was built based on significance-satisfaction analysis (Hsu et al., 2006). A SMM consists of four quadrants: ''do better'', ''keep up'', ''education'' and ''no change'' areas (see Fig. 2) (Hsu, 2008). Based on the results derived by the SMM, leaders are able to prioritize areas for improvement and determine the size of each quadrant strategically based on the university's needs and resources. For example, universities with limited resources may want to prioritize only the most critical items for improvement, and in order to identify these items, they may prefer to squeeze the ''do better'' area by setting a higher-threshold value on weights and a lower-threshold value on scores (Hsu et al., 2006).

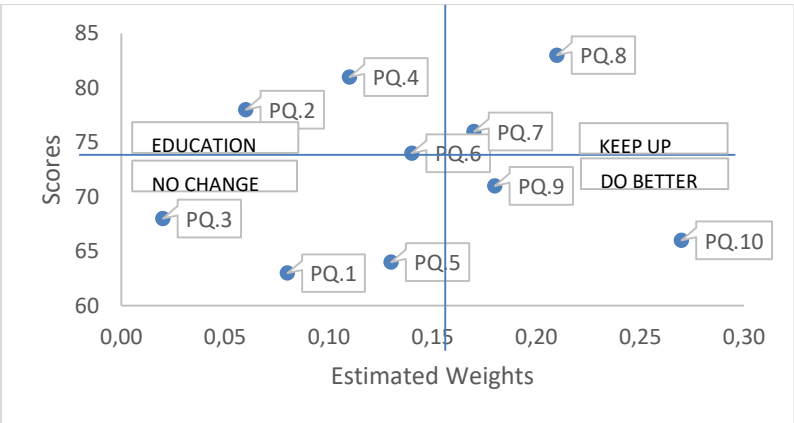

Figure 2. *Strategic Management Map.*

The quality items in the ''do better'' quadrant need the most attention from the leaders as the improvement in this quadrant would account for most of the influence on satisfaction (Hsu et al, 2006). The quality items in the ''keep up'' quadrant, on the other hand, should be well-preserved (Hsu et al, 2006). Despite the high satisfaction scores on the quality items on "education" quadrant, low weights of these quality items indicates that the quality items on "education" quadrant are not adequately appreciated by the students and not adequately promoted by the university. This finding implies that the importance of these quality items on "education" quadrant needs to be acknowledged by the students and efforts must be geared up for persuasive public relations in order to turn these qualities into competitive advantages. Finally, the quality attributes in the ''no change'' quadrant should receive the least attention from the leaders as to improving the quality attributes in this quadrant has the least positive effect (Hsu et al., 2006).

In line with the study of Loes and Pascarella (2015), findings showed that successful formal and informal interaction with faculty contributes to SS. This finding also confirms the findings of Abdous and Yen (2011)

[2] As of 2020, ACSI score for 46 industries and 10 sectors can be obtained at: https://www.theacsi.org/national-economic-indicator/national-sector-and-industry-results

and Johnson et al (2014) who argue that interpersonal interactions might have the greatest effect on the quality perceptions. Consistent with Herzberg (1959) hygiene-motivation theory which asserts that the hygiene factors are taken for granted factors that does not really make a difference in satisfaction, the research finding indicated that students value the interactional/process more than the core/hygiene aspect. On the other hand, this finding also coincides with the findings that the perceived usefulness is the strongest predictors of satisfaction (Dubey & Sahu, 2021; Liaw & Huang, 2013). All of these findings suggest that the higher education institutions should focus more on the interactional/process and utility/benefit aspects of the quality to achieve high student satisfaction with the lowest possible cost.

4. Conclusion and Discussion

Over the last decade, Turkey like many other countries exhibited a great expansion and greater competition both in its undergraduate and graduate levels. All the future projections suggest that the competition for undergraduate and graduate students will continue to increase gradually causing programmes to lose its former selectivity and causing people to question whether it is time to slow down the production line (Fishman et al., 2017). Although many people continue to question the value of what is taught in the universities, number of people with bachelor, master or PhD degree is increasing rapidly worldwide in order to accommodate those who want to get higher education in the hope of finding better jobs in the future. As we all know, completing a certain level of education has long been viewed as vital for assuring a good employment and economic advancement, yet the education level needed to pursue a reasonable economic success has increased a long time ago. Indeed, whether the rewards of having a bachelor, master or PhD degree compensate for the costs of acquiring one, we are now swiftly heading from a time where a high school diploma was more than adequate to a time where four years of bachelor's degree is just a minimum prerequisite to attain a good employment (Fishman et al., 2017). To improve their employment prospects and to distinguish themselves on the labor market, many people now attend to university. Many people think that holding a degree (Bachelor, Master or PhD) is an absolute necessity and an invaluable asset for securing good employment and upward economic mobility. Hence, to remain competitive in the sector, higher education institutions need to become increasingly student-driven and identify the drivers of satisfaction continually as to retain their most profitable assets–students. With that being said, the task facing leaders in the higher education is to focus on the right quality attributes that have the greatest positive effect on student satisfaction.

Through a SMM, our analysis may help leaders identify weak areas and optimize limited resources by prioritizing the areas for improvement to increase students' institutional and personal commitment and reduce early dropouts. This research also contributes to the discussion on quality by demonstrating that the higher education institutions better focus on the interactional/process and utility/benefit aspects of the quality construct if they wish to survive in the competition. Specifically, the higher education leaders must ensure that their staff (both academic and administrative) should always be attentive, supportive and willing to help students with their problems (interactional/process aspect). Moreover, higher education institutions better help themselves if they focus more on their alumni and seek their support in order to increase the chances of employment for their graduates (perceived usefulness/benefit aspect).

This research also contributes to the discussion about the relationship between SS and SC by proving that this relationship is contingent on the number of different factors. Although the conventional thinking tends to anticipate a negative relationship between SSI and SC, this study demonstrated that this is not necessarily true. Indeed, students that complain may still be the satisfied but demanding students who are believing that they can make a difference in their universities by seeking solutions and improvements with their complaints. It is important to note that such feedbacks from complaining students may provide invaluable insights and learning opportunities for the higher institutions. As argued by Hsu et al. (2006), this is indeed why well-managed organizations identify their most demanding customers and focus not on the ones who are easily satisfied. Therefore, it is concluded that the investment in complaint handling process can create an invaluable competitive edge for higher education institutions.

5. Recommendations

Despite its important theoretical and practical contributions, this study also has several limitations. First, the findings are based on a one-site design which limits the generalizability of the findings. Therefore, to better understand the model, a more representative sample should be obtained. Second, the findings are based on a

one-time design. Since the data was collected during the Covid-19 induced hybrid education, the findings might potentially be limited to this specific time span and so, some of the explanations that are provided in the findings section may only be limited to these extraordinary circumstances. In line with this thinking, it is important to note that the relationship between SSI and SC is elusive. Students, for instance, might be less tolerant over time when they no longer perceive the hybrid mode of education as something extraordinary; and some quality attributes may lose their significance while some others gain more importance. For instance, when the hybrid education becomes a norm, significance of campus location or campus facilities may lose some of its weight on the perceived quality attributes. So, to better understand the phenomenon, the study should be continually repeated to better understand the drivers of perceived quality and student satisfaction along with their consequences within different context and time. However, despite all these limitations, this research should still be considered as a successful attempt to explain the phenomenon of student satisfaction by providing some important insights to higher education leaders about some specific quality attributes that need to be improved to enhance student satisfaction.

6. References

Abdous, M. & Yen, C-J (2011). A study of the predictive relationships between faculty engagement, learner satisfaction and outcomes in multiple learning delivery modes. *International Journal of Distance Education Technologies, 9*(4), 57–70. https://doi.org/10.4018/jdet.2011100105

Afzaal, A. & Ahmad, I. (2011). Key factors for determining student satisfaction in distance learning courses: A study of Allama Iqbal Open University. *Contemporary Education Technology, 2*(2), 118-134. https://doi.org/10.30935/cedtech/6047

Anderson, E. W. & Fornell, C. (2000). Foundations of the American customer satisfaction index. *Total Quality Management, 11*(7), 869-883. https://doi.org/10.1080/09544120050135425

Anderson, E. W. (1998). Customer satisfaction and word of mouth. *Journal of Service Research*, *1*(1), 5–17. https://doi.org/10.1177/109467059800100102

Arat, M. (2011). To what extent the student is a customer. *International Journal of Social Sciences and Humanity Studies, 3*(1), 293-306. Retrieved from https://dergipark.org.tr/tr/pub/ijsshs/issue/26221/276173

Athiyaman, A. (1997). Linking student satisfaction and service quality perceptions: The case of university education. *European Journal of Marketing*, *31*(7), 528-540. https://doi.org/10.1108/03090569710176655

Braxton, J.M. (2019). Review of the book leaving college: Re-thinking the causes and cures of student Attrition, by Vincent Tinto. *Journal of College Student Development, 60*(1), 129-134. https://doi.org/10.1353/csd.2019.0012

Castañeda, J. A. (2011). Relationship between customer satisfaction and loyalty on the internet. *Journal of Business and Psychology*, *26*(3), 371–383. Retrieved from http://www.jstor.org/stable/41474886

Centra, J. A. & Rock, D. (1971). College environments and student academic achievement. *American Educational Research Journal, 8*(4), 623-634. https://doi.org/10.3102/00028312008004623

Chen, Y.-C. (2017). The relationships between brand association, trust, commitment, and satisfaction of higher education institutions. *International Journal of Educational Management*, *31*(7), 973-985. https://doi.org/10.1108/IJEM-10-2016-0212

Cheng, M., Taylor, J., Williams, J. & Tong, K. (2016). Student satisfaction and perceptions of quality: Testing the linkages for PhD students. *Higher Education Research & Development, 35*(6), 1153-1166. https://doi.org/10.1080/07294360.2016.1160873

Chin, W. W. (1998). Issues and opinion on structural equation modeling. *MIS Quarterly*, *22*(1), 7-16. Retrieved from http://www.jstor.org/stable/249674.

Chiou, J.-S. & Droge, C. (2006). Service quality, trust, specific asset investment, and expertise: Direct and indirect effects in a satisfaction-loyalty framework. *Journal of the Academy of Marketing Science*, *34*(4), 613-627. https://doi.org/10.1177/0092070306286934

Chiou, J.-S. (2004). The antecedents of consumers' loyalty toward internet service providers. *Information & Management, 41*(6), 685–695. https://doi.org/10.1016/j.im.2003.08.006

Dehghanpouri, H., Soltani, Z. and Rostamzadeh, R. (2020). The impact of trust, privacy and quality of service on the success of E-CRM: The mediating role of customer satisfaction. *Journal of Business & Industrial Marketing, 35*(11), 1831-1847. https://doi.org/10.1108/JBIM-07-2019-0325

Dericks, G. (2019), Thompson, E., Roberts, M. & Phua, F. (2019). Determinants of PhD student satisfaction: The roles of supervisor, department, and peer qualities. *Assessment & Evaluation in Higher Education, 44*(7), 1053-1068. https://doi.org/10.1080/02602938.2019.1570484

Diamantopoulos, A & Siguaw, J. A. (2006). Formative versus reflective indicators in organizational measure development: A comparison and empirical illustration. *British Journal of Management, 17*(4), 263-282. https://doi.org/10.1111/j.1467-8551.2006.00500.x

Drew, T. L. D. & Work, G. G. (1998). Gender-based differences in perception of experiences in higher education. *The Journal of Higher Education, 69*(5). 542-555. https://doi.org/10.1080/00221546.1998.11775150

Dubey, P. & Sahu, K.K. (2021). Students' perceived benefits, adoption intention and satisfaction to technology-enhanced learning: examining the relationships. *Journal of Research in Innovative Teaching & Learning*, *14*(3), 310-328. https://doi.org/10.1108/JRIT-01-2021-0008

Engberg, M. E. (2007). Educating the workforce for the 21st century: A cross-disciplinary analysis of the impact of the undergraduate experience on students' development of a pluralistic orientation. *Research in Higher Education*, *48*(3), 283-317. https://doi.org/10.1007/s11162-006-9027-2

Ewell, P.T. Institutional characteristics and faculty/administrator perceptions of outcomes: An exploratory analysis. *Research in Higher Education, 30*(2), 113–136. https://doi.org/10.1007/BF00992715

Fishman, T., Ludgate, A., Tutak, J. & Singh, P. (2017). *Success by design improving outcomes in American higher education*. Deloitte Center for Higher Education Excellence. Retrieved from https://www2.deloitte.com/us/en/insights/industry/public-sector/improving-student-success-in-higher-education.html

Fornell, C. & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39–50. https://doi.org/10.2307/3151312

Fornell, C., Johnson, M.D., Anderson, E.W., Cha, J. & Bryant, B.E. (1996). The American customer satisfaction index: Nature, purpose, and findings. *The Journal of Marketing, 60*(4), 7-18. https://doi.org/10.2307/1251898

Garbarino, E. & Johnson, M. S. (1999). The different roles of satisfaction, trust, and commitment in customer relationships. *Journal of Marketing*, *63*(2), 70–87. https://doi.org/10.2307/1251946

Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in online shopping: An integrated model. *MIS Quarterly*, *27*(1), 51–90. https://doi.org/10.2307/30036519

Ha, H. & Janda, S. (2008). An empirical test of a proposed customer satisfaction model in e-services. *Journal of Services Marketing*, 22(5), 399-408. https://doi.org/10.1108/08876040810889166

Hamilton, K., Helliwell, J.F. & Woolcock, M. (2016, August). *Social capital, trust and well-being in the evaluation of wealth* (Policy Research Working Papers No: 22556). https://doi.org/10.1596/1813-9450-7707

Hearn, J. C. (1985). Determinants of college students' overall evaluations of their academic programs. *Research in Higher Education, 23*(4), 413-437. https://doi.org/10.1007/BF00973688

Helm, E. G., Sedlacek, W. E., Prieto, D. O. (1998). The relationship between attitudes toward diversity and overall satisfaction of university students by race. *Journal of College Counseling, 1*(2), 111-120. https://doi.org/10.1002/j.2161-1882.1998.tb00130.x

Herzberg, F. (1959). *The motivation to work*. Wiley.

Hirschman, A. O. (1970). *Exit, voice, and loyalty: Responses to decline in firms, organizations, and states*. Harvard University Press

Hsu, S.-H. (2008). Developing an index for online customer satisfaction: Adaptation of American customer satisfaction index. *Expert Systems with Applications, 34*(4), 3033-3042. https://doi.org/10.1016/j.eswa.2007.06.036

Hsu, S.H., Chen, W.H. & Hsueh, J.T. (2006). Application of customer satisfaction study to derive customer knowledge. *Total Quality Management and Business Excellence, 17* (4), 439-454. https://doi.org/10.1080/14783360500528197

Jayakumar, U. M. (2008). Can higher education meet the needs of an increasingly diverse and global society? Campus diversity and cross-cultural workforce competencies. *Harvard Educational Review, 78*(4), 615-651. https://doi.org/10.17763/haer.78.4.b60031p350276699

Jiang, L., Jun, M. & Yang, Z. Customer-perceived value and loyalty: How do key service quality dimensions matter in the context of B2C e-commerce? *Service Business, 10* (2), 301–317. https://doi.org/10.1007/s11628-015-0269-y

Johnson, Z., Cascio, C., & Massiah, C. (2014). Explaining student interaction and satisfaction: An empirical investigation of delivery mode influence. *Marketing Education Review*, *10*(3), 227–238. https://doi.org/10.2753/MER1052-8008240304

Johnston, T. C. (2010). Who and what influences choice of university? Student and university perceptions. *American Journal of Business Education, 3*(10), 15–24. https://doi.org/10.19030/ajbe.v3i10.484

Kalia, P., Kaushal, R., Singla, M. & Parkash, J. (2021). Determining the role of service quality, trust and commitment to customer loyalty for telecom service users: a PLS-SEM approach. *The TQM Journal*, *33*(7), 377-396. https://doi.org/10.1108/TQM-04-2021-0108

Kaur, H. & Soch, H. (2018). Satisfaction, trust and loyalty: investigating the mediating effects of commitment, switching costs and corporate image. *Journal of Asia Business Studies*, *12*(4), 361-380. https://doi.org/10.1108/JABS-08-2015-0119

Kusumawati, A. & Rahayu, K.S. (2020). The effect of experience quality on customer perceived value and customer satisfaction and its impact on customer loyalty. *The TQM Journal*, *32*(6), 1525-1540. https://doi.org/10.1108/TQM-05-2019-0150

Lala, V. & Priluck, R. (2011). When students complain: An antecedent model of students' intention to complain. *Journal of Marketing Education*, *33*(3), 236-252. https://doi.org/10.1177/0273475311420229

Latif, K.F., Bunce, L. & Ahmad, M.S. (2021). How can universities improve student loyalty? The roles of university social responsibility, service quality, and "customer" satisfaction and trust. *International Journal of Educational Management*, *35*(4), 815-829. https://doi.org/10.1108/IJEM-11-2020-0524

Liaw, S. & Huang, H. (2013). Perceived satisfaction, perceived usefulness and interactive learning environments as predictors to self-regulation in e-learning environments. *Computers & Education, 60*(1), 14-24. https://doi.org/10.1016/j.compedu.2012.07.015

Lint, A. (2013). E-learning student perceptions on scholarly persistence in the 21st century with social media in higher education. *Creative Education, 4*(11), 718-725. http://dx.doi.org/10.4236/ce.2013.411102

Loes, C.N. & Pascarella, E.T. (2015). The benefits of good teaching extend beyond course achievement. *Journal of the Scholarship of Teaching and Learning*, *15*(2), 1-13. https://doi.org/10.14434/josotl.v15i2.13167

Mestrovic, D. (2017). Service quality, students' satisfaction and behavioral intentions in STEM and in higher education institutions**.** *Interdisciplinary Description of Complex Systems, 15*(1), 66-77. https://doi.org/10.7906/indecs.15.1.5

Mwiya, B., Bwalya, J., Siachinji, B., Sikombe, S., Chanda, H. & Chawala, M. (2017). Higher education quality and student satisfaction nexus: Evidence from Zambia. *Creative Education*, *8*(7), 1044-1068. https://doi.org/10.4236/ce.2017.87076

Naylor, R., Bird, F.L. & Butler, N. (2021). Academic expectations among university students and staff: addressing the role of psychological contracts and social norms. *Higher Educucation, 82*(5), 847–863 https://doi.org/10.1007/s10734-020-00668-2

Parasuraman, A., Zeithaml, V. & Berry, L.L. (1994). Alternative scales for measuring service quality: A comparative assessment based on psychometric and diagnostic criteria. *Journal of Retailing, 70*(3), 12-40. https://doi.org/10.1016/0022-4359(94)90032-9

Pascarella, E. T. (1980). Student–faculty informal contact and college outcomes. *Review of Educational Research, 50*(4), 545–595. https://doi.org/10.2307/1170295

Ping, R.A. (1997). Voice in business-to-business relationships: Cost-of-exit and demographic antecedents. *Journal of Retailing, 73*(2), 261-281. https://doi.org/10.1016/S0022-4359(97)90006-3

Polat, C. (2015). How to measure the customer satisfaction among international students? An explorative case study on university students. *Niğde Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 8*(2), 41-59. Retrieved from http://dergipark.ulakbim.gov.tr/niguiibfd/

Polat, S., Arslan, Y. & Yavas, E. (2016). Importance level of image attractors in the process of university selection: An application on prospective university students in turkey. *Kastomonu Eğitim Dergisi, 24*(4), 1919-1934. Retrieved from https://dergipark.org.tr/tr/pub/kefdergi/issue/27734/327606

Serenko, A. (2011). Student satisfaction with Canadian music programmes: The application of the American customer satisfaction model in higher education. *Assessment & Evaluation in Higher Education, 36*(3), 281-299. https://doi.org/10.1080/02602930903337612

Stukalina, Y. (2012). Addressing service quality issues in higher education: the educational environment evaluation from the students' perspective. *Technological and Economic Development of Economy*, *18*(1), 84-98. https://doi.org/10.3846/20294913.2012.658099