

THE IMPACT OF PERCEIVED SERVICE QUALITY ON STUDENT LOYALTY IN HIGHER EDUCATION INSTITUTIONS

Māris Purgailis

*Faculty of Economics and Management
University of Latvia, Riga, Latvia*

Kristīne Zaksa

*Faculty of Economics and Management
University of Latvia, Riga, Latvia*

Abstract

Purpose – this paper examines the factors that positively affect the student-perceived quality, satisfaction and along with that their loyalty to the higher education institutions in Latvia.

Design/methodology/approach – A survey was conducted among 2010 students from different higher education institutions in Latvia. The research hypotheses were tested by structural equation modelling.

Findings – the findings suggest that the student-perceived quality correlates with such factors as academic staff, study content, readiness for labour market and acquired skills which consequently have an influence on the student loyalty to the higher education institution whereas other factors, such as facilities, library, administrative staff, information system, have no significant influence on student perceived quality and loyalty.

Research limitations/implications – This study is limited to the one country under investigation and to generalise the study results the research should be extended to other countries.

Practical implications – the higher education institution management could use the results of the research to improve the study process and to increase the student satisfaction and loyalty.

Originality/value – The study presents a student-centred and learning outcomes-oriented study process evaluation as a part of the perceived quality evaluation and the linkage of the evaluations to the student loyalty.

Keywords: student loyalty, perceived service quality, satisfaction, higher education institutions, university.

1. INTRODUCTION

The approach “higher education as a service” is still an issue of heated debates; however, along with a significant growth of private funding in the financing of higher education institutions they increasingly face the issues of attracting students, student satisfaction, quality perceived by students and their loyalty. Besides, the topicality of the issue of quality in higher education institutions is rising.

Services are intangible and a service represents a process, consequently, the quality of a service is more difficult to perceive and it is more complicated to introduce the standards the service should meet that could be used for measuring quality. In general, the perceived quality is defined as the customer’s judgement about an entity’s overall excellence or superiority (Rowley, 1997). Parasuraman et al. (1991) support the notion that service quality is an overall evaluation similar to attitude. Besides, the customer perception of the quality may differ from the one described in the quality standards or regulatory documents for the provision of the service. It also relates to students. Many researchers state that customer assessments of continuously provided services may depend on performance. A performance-based measure may explain more of the variance in an overall measure of service quality (Oliver, 1989; Cronin & Taylor, 1992; Boulding et al., 1993). Based on the above mentioned considerations several customer-perceived quality assessment methods have been developed which have also been adopted and used in higher education.

The purpose of this paper is to establish the factors that positively affect the student-perceived quality, satisfaction and, along with that, the loyalty to the institution of higher education.

The paper is structured as follows: first, the authors analyse the factors influencing the student loyalty as well as the methods for the assessment of customer-perceived quality in a service industry and especially in higher education. Subsequently presented are the hypotheses, the research method description and discussion of the study results. Finally, the conclusion and managerial implications are provided.

2. FACTORS INFLUENCING STUDENT LOYALTY AND HYPOTHESES

Loyalty represents a very complex factor in the customer behaviour and, has respectively been studied from various aspects in marketing literature. Consequently, there is no unanimous definition of customer loyalty. After summarizing various studies it can be concluded that loyalty expressions have two dimensions: behavioural and attitudinal. The behavioural dimension comprises such aspects as making repeated purchases, frequency of purchases and habit of changing product or service providers. The attitudinal dimension, in its turn, explains the customer's attitude, trust and willingness to recommend (Foscht, Schloffer, 2009). In the service sector the explanation and definition of loyalty are even more complicated due to the service features, particularly so because services themselves are based on the relations between a customer and service provider. The specific feature of higher education is that the "repeated purchase" is common just in the cases when a graduate chooses to continue studies in the next level or if a need arises for additional knowledge and/or a scientific degree or qualification. Considering that lately higher education institutions have started active offering of further education courses, the issue of loyalty is becoming more and more topical. Thus from the point of view of loyalty two aspects are important for higher education institutions: the willingness to recommend and, if needed, the willingness to choose the same higher education institution or the same service provider repeatedly.

Marketing research conducted before has proved that customer loyalty is affected by the customer-perceived quality, satisfaction and overall image of the organization (Kotler and Fox, 1995; Zeithaml, 2000; Helgesen, 2006).

Regarding the satisfaction the marketing literature sources define customer satisfaction either as the effect from the usage or communication (Oliver and Swan, 1989) or as "a person's feeling or attitude in relation to a product after it has been acquired" (Solomon, 1994). In the area of higher education Elliot and Healy describe satisfaction as a short-term attitude that has arisen after evaluating one's acquired experience during the use of the higher education service (Elliot and Healy, 2001). Moreover, customer satisfaction should exert positive influence on loyalty (Athiyaman, 1997; Schertzer and Schertzer, 2004; Marzo-Navarro et al., 2005).

There is also a lot of academic argument about the mutual correlation between the satisfaction and organization image. Johnson et al. (2001) emphasize that image perception develops after the service has been received. Barich and Kotler point out that the image has a positive impact on sales volumes as well as loyalty (Barich and Kotler, 1991). Thus, Hegelsen (2006), when studying student loyalty, included the reputation of the higher education institution in the model serving as a synonym to the image. In this research the authors included the values in the image evaluation that had been defined in the mission statement of the higher education institution.

As the authors indicated above, the customer-perceived quality and the customer idea about the indicators characterizing quality can differ from the understanding of the service provider as well as from the quality standards envisaged in the respective regulatory documents for the provision of the service. There have been many discussions about the student-perceived quality and indicators influencing it. Walker believes that students being incapable of assessing the higher education quality as a whole more focus on the quality of environment and classes delivered by the academic staff (Walker 1995). Tang and Zairi have discovered that the higher education employees, compared to other service branches, possess more authority (Tang and Zairi, 1998). It can be explained with a bigger autonomy in contacting students. This significant discovery still more proves the need for the distinguishing of the "personnel quality" in the factor of perceived quality. Considering the fact that the higher education service is knowledge-intensive and requires high involvement of human resources, the most significant factor is namely the human resources and the environment is subjected to the quality of human resources. However, there might also be other factors which are important for the students and which are

correlated to the perceived quality. Further the authors analyse the factors of perceived quality and the respective measurement methods.

3. PERCEIVED SERVICE QUALITY AND SATISFACTION ASSESSMENT METHODS

As Johnson et al. (2001) point out, the customer-perceived quality can be composed by a multitude of diverse factors. The previously created customer-perceived quality and satisfaction models contain essential drawbacks and along with the change of times and environment as well as acquisition of new knowledge the models of perceived quality and satisfaction evaluation must be updated and adapted to the new conditions.

So far for the customer-perceived service quality assessment several methods have been developed:

- SERVQUAL – a multiple-item scale for measuring customer perceptions of service quality (Parasuraman et al., 1988)
- SERVPERF – a multiple-item scale for measuring customer evaluation of a service performance (Cronin & Taylor, 1992)
- EP – evaluated performance; a scale that measures the gap between perceived performance and the ideal amount of a feature rather than the customer's expectations (Teas, 1993a, b)
- HSQM - hierarchical service quality model (Brady and Cronin, 2001).

The SERVQUAL method was developed in 1988 by a group of researchers Parasuraman A., Zeithaml V.A. and Berry L.L. This method recommends measuring the perceived service quality by the 22 items grouped in five different dimensions as shown in Table 1.

Table 1

Perceived quality dimensions in service industry

Quality dimensions	Explanation of quality dimension
Tangibles	Physical facilities, equipment, and appearance of personnel
Reliability	Ability to perform the promised service dependably and accurately
Responsiveness	Willingness to help customers and provide prompt service
Assurance	Knowledge and courtesy of employees and their ability to inspire trust and confidence
Empathy	Caring, individualized attention the firm provides to its customers

Source: Parasuraman A., Zeithaml V.A. and Berry L.L., 1988

The SERVQUAL method makes it clear that the customer-perceived service quality is the comparison of the customer's prior expectations or desires to what the customer actually received. The group of researchers suggest that this model can be used, for example, through regular measurement of customer-perceived quality and comparing it to competitors; moreover, the organization can evaluate each individual dimension, or the perceived quality of the whole.

The SERVPERF method only deals with the perceived quality of service and the EP method (evaluated performance) measures the difference between the perceived quality and customer-desired or ideal state. Empirical studies show that the SERVPERF method, which is based solely on the actual service performance evaluation, better explains the statistical reliability of the data than the other methods. Similarly, the subsequent research showed that customer expectations do not play the decisive role in perceived quality measurements. The SERVPERF method is based on the measurement of the same dimension, which is used in the SERVQUAL method; however, it excludes the customer expectations in respect to these indicators and measures solely the service performance.

Both the SERVQUAL and SERVPERF methods have also been adapted to the higher education needs and researcher Firdaus A. (2006 a) has combined both of these methods and developed the HEdPERF method comprising a set of 41 items. This instrument aims to consider the academic components and aspects of the total service environment as experienced by the student. The quality indicators are classified in five dimensions:

1. *Non-academic aspects.* Items that are essential to enabling students to fulfil their study obligations, and relate to duties carried out by non-academic staff.
2. *Academic aspects.* Responsibilities of academics.
3. *Reputation.* Importance of higher learning institutions in projecting a professional image.
4. *Access.* Includes such issues as approachability, ease of contact, availability and convenience.
5. *Programme issues.* Importance of offering wide ranging and reputable academic programmes/specializations with flexible structures and health services.

The SERVPERF and HEDPERF scales were compared in terms of reliability and validity and confirmed the superiority of the newly-proposed measurement instrument (Firdaus, 2006b). Researcher Brochado A. (2009) has also compared these methods in higher education and concluded that both present the best measurement capability and it is impossible to identify which one is the best.

The research by authors Sakthivel P.B. et al. (2005) was in turn aimed at developing a TQM model of academic excellence and empirically established a relationship between TQM implementation and student satisfaction with academic performance. The model proposed by the authors for student-perceived quality assessment includes five dimensions, so called 5C:

- *Commitment of top management.* Top management should ensure non-dilution of the stated objectives.
- *Course delivery.* Expert knowledge must be matched with expert skill to transmit the knowledge.
- *Campus facilities.* The provision of infrastructure and physical facilities in the campus for student learning, co-curricular and extracurricular activities.
- *Courtesy.* Courtesy – an emotive and positive attitude towards students will lead to congenial learning environment.
- *Customer feedback and improvement.* Constant feedback from the students leading to continuous improvement in the process is the key to achieving excellence.

The authors suggest computing the total quality management index (TQMI) with respect to each quality variable. Education managers can keep these indices as reference points at which improvement efforts can be targeted. “If the level of TQM implementation is improved through application of this model, the satisfaction of students will substantially be increased.” (Sakthivel P.B. et al., 2005)

Marketing studies have shown that the perceived quality of the customer is very closely related to customer satisfaction and there are a variety of methods used for the measurement of customer satisfaction which are similar to the perceived quality assessment methods.

The study by Douglas J. et al. (2007) of student satisfaction is based on Herzberg’s two-factor theory explaining job satisfaction: the factor group “motivators” contributed to the rise of satisfaction and the factor group “hygiene factors” ensured the avoidance of dissatisfaction (Herzberg, 1959). Based on the ten determinants of quality (SERVQUAL method, Parasuraman et al., 1985), together with Johnston’s (1995) redefined list of determinants the group of researchers divide the causes of student satisfaction and dissatisfaction into four groups:

- factors that contribute to satisfaction
- critical factors – factors that contribute to the existence of satisfaction; the lack of these factors causes disaffection
- factors contributing to dissatisfaction
- neutral factors which have no impact either on satisfaction or dissatisfaction.

The key findings of the research are:

- satisfaction with the learning process is mainly driven by the intangible dimensions of service
- factors that contribute to students' dissatisfaction (the lack of these factors causes dissatisfaction while their presence does not increase the level of satisfaction) are attitude, responsiveness, tangible dimension of service (e.g. facilities, technical equipment), working with others, availability of university management and socializing opportunities;
- communication and responsiveness are the key factors in the quality assessment because they contribute to the satisfaction and the lack of these factors causes dissatisfaction
- usefulness is the key factor in the learning process, which contributes to satisfaction, but it does not belong to the group of factors which contribute to dissatisfaction

Another approach for the assessment of customer satisfaction is the Customer Satisfaction Index model. In 1989 at the University of Michigan the first customer satisfaction measurement system was established on the national level – Swedish customer satisfaction barometer (SCSB). SCSB was derived from the American Customer Satisfaction Index Model (ACSI) and the expansion of the ACSI in 1998 resulted in the European Customer Satisfaction Index Model (ECSI). Since the mid-1990s customer satisfaction index models (CSI) have been recognized and used worldwide at both national and individual company level (Johnson et al., 2001).

There have been several attempts to adapt the CSI model to higher education. For example, the group of researchers Martensen A., L. Gronholdt and Kristensen K. adapted ECSI model to higher education, splitting the perceived quality factor into two parts: technical quality and staff attitude. The results showed that the student satisfaction index model explained the student satisfaction very well. However, the findings also showed that in higher education, compared with other industries, there is a distinct correlation between the latent variables. Satisfaction is affected significantly not only by perceived quality, perceived value, but also by the image of higher education institution. At the same time the expectations were not statistically significant. (Martensen et.al., 1999).

At the Ålesund University College, Norway the modified CSI model proposed by Johnson et al. (2001) was tested. Ø. Helgesen and E. Nettet found that service quality has a significant impact on student satisfaction, while the latent variable “commitment” was not statistically significant. The authors suggest ascertaining in more detail the quality parameters that are important for the student as a customer. Along with that the university management should pay more attention to image building. (Helgesen and Nettet, 2007).

Quite often the service quality and customer satisfaction evaluations include the indicators that characterize the process of the service itself, more seldom indicators refer to the result achieved by the service.

Brady and Cronin (2001) recommend using the hierarchical service quality model (HSQM) for the evaluation of perceived quality. Here the service quality is seen as a multi-level construct, which has three dimensions: interaction quality, environment quality and outcome quality. Quality of interaction includes the service provider's attitude, behaviour and competence. Quality of the environment includes ambient condition, design and social factors. Quality of the results includes the waiting time, tangibles and service value.

In general, all the authors suggest evaluating the quality of the service process as such and only the study by Brady and Cronin (2001) suggests including also the evaluation of the service result. In the case of higher education the result of the study process are the acquired skills and readiness for the labour market.

The higher education reforms require introducing the student-centred and study result-oriented education. Accordingly, when assessing the student-perceived quality the higher education institution managers also have to require the study result assessment. As a result of the study process the student acquires the added value – new knowledge and skills that, in their turn, enhance his competitiveness in the labour market. Consequently, by becoming aware of the gains from the service after its completion the student can evaluate the acquired result.

Based on previously made research assessing the perceived quality, the authors suggest dividing the quality factors into four parts:

- *result “quality”* – acquired knowledge and skills, readiness for the labour market and readiness for next study level;
- *process “quality”* – study courses and teaching methods, e-courses, internationalization, library;
- *staff “quality”* – the administrative and academic staff;
- *environment “quality”* – facilities, additional services.

The authors suggest evaluating each of the quality indicators and their influence on student perceived quality and, as the next step, the impact of the perceived quality on the student loyalty to the higher education institution.

4. HYPOTHESES AND THE RESEARCH METHOD

Based on the above-mentioned studies and considerations the authors put forth a range of hypotheses that concern the perceived quality as well as the satisfaction and loyalty.

H1: The dimensions characterizing quality (service results – skills, readiness for the labour market, academic staff quality, contents, administrative staff quality, premises, library, e-courses, information systems, internationalization) positively affect the student-perceived quality.

H2: Student-perceived quality has a positive effect on the student satisfaction.

H3: Student satisfaction has a positive effect on the image of the higher education institution. H4: Student satisfaction has a positive effect on the student loyalty to the higher education institution.

H5: The image of the higher education institution has a positive effect on the student loyalty to the higher education institution.

The schematic depiction of the hypotheses is provided in figure 1.

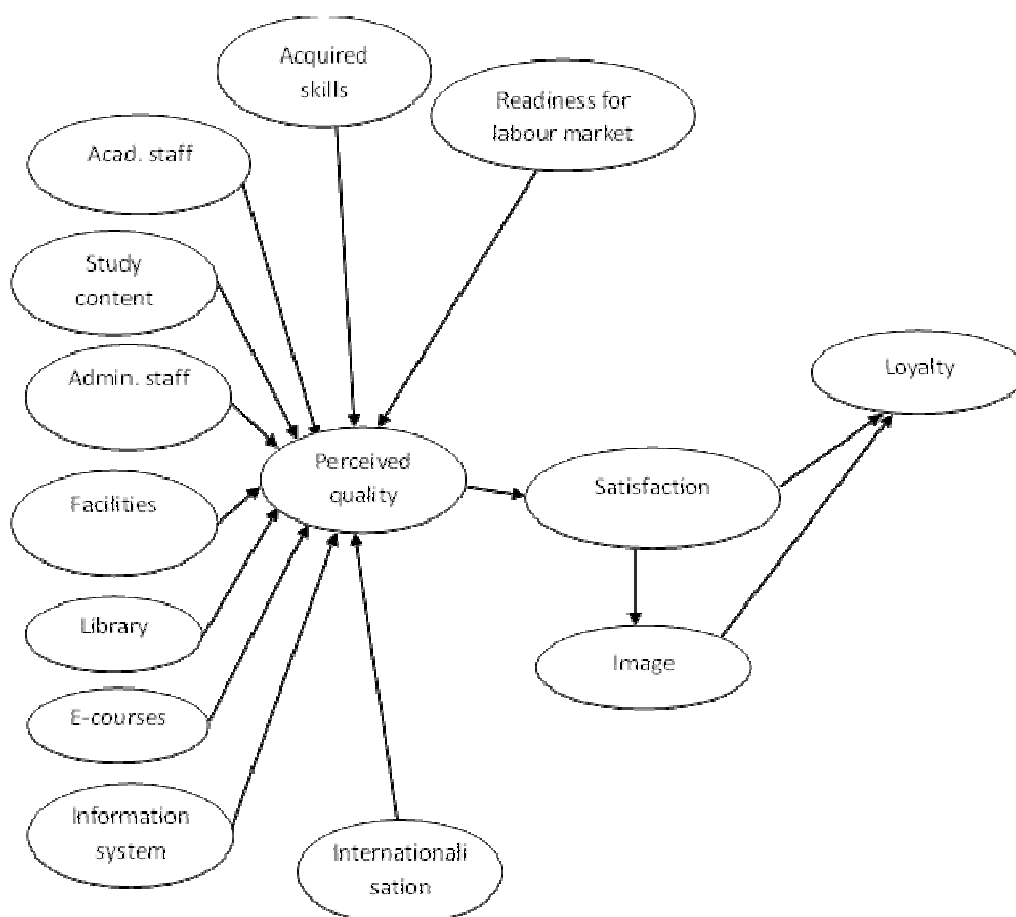


Figure 1. Conceptual model of the hypotheses put forth in the research

Source: designed by the authors

For the assessment of the student-perceived quality and its impact on loyalty the authors suggest using the structural equation modelling similarly as it is used in the CSI models mentioned above. For the formation of the structural model and its analysis the computer program AMOS (Analysis of Moments Structures) will be used. It is recommended that the data analysis is made in two steps by first developing the measurement model and assessing its validity and then, on its basis, creating the structural equation model. (Anderson and Gerbing, 1988). The results will show which factors have significant influence on the student-perceived quality and which are not significant.

There are no similar studies published on student loyalty to any university in Latvia therefore no secondary data are available. All data about the student-perceived quality, satisfaction and loyalty to a university are usually available only for the university management therefore this is a unique research in Latvia.

For last 5 years 24 to 26 thousand students have been graduating every year in Latvia. For testing the hypotheses the authors made a purposive sample with the criteria “graduate of a higher education institution” and in year 2009 the graduates of the University of Latvia were asked to take part in the survey and at the beginning of year 2012 the invitation to take part in the survey was sent to marketing research company respondents which met the above-mentioned criteria.

For testing the hypotheses a special questionnaire was developed where each of the quality dimensions was described with a number of indicators (in total 44 items) (see appendix 1). For the answers the Likert scale was used in the range from 1 to 7, where 1 means “strongly disagree” and 7 means “completely agree”. The questionnaires were filled in by 2010 alumni from different Latvian universities. The four sectors most represented in this sample of respondents are commerce (23%), natural sciences, mathematics and information technology (16%), education (14%) and humanities and arts (13%), followed by communication, politics, psychology and other social sciences (10%), law (9%), engineering, manufacturing and construction (8%), health care and social welfare (5%) and agriculture (2%).

5. THE RESEARCH RESULTS AND DISCUSSION

The latent variables “E-courses” and “Internationalization” were excluded from further data analysis due to the fact that the amount of missing responses on these issues exceeded 15%. Thus the tested structural model is different from the initial conceptual model (Figure 1) and it is impossible to verify the hypothesis regarding the effect “E-courses” and “Internationalization” on the latent variable “Perceived quality”.

The standardized estimate loadings of the indicators in the measurement model are above 0.5 and the model fit indices meet the suggested values (see Table 2). Consequently, from the measurement model the structural equation model is developed, which reveals the latent variable cross-correlations and the results obtained approve or reject the hypotheses. The model fit indices of the structural equation model are good which means that the structural model is valid (see Table 2).

Table 2

Measurement model and Structural model goodness-of-fit

Goodness-of-fit indices	Measurement model	Structural model	Fitness
Chi-square	8137.717	8412.061	Not applicable to this sample
Degrees of freedom	968	1003	
Ratio of chi-square to degrees of freedom	8.407	8.387	
Comparative fit index (CFI)	0.907	0.904	Good
Root mean square error of approximation (RMSEA)	0.061	0.061	Good
Tucker-Lewis coefficient (TLI)	0.892	0.892	Good

To confirm or reject the hypothesis the AMOS program uses the t-test, where t is a value greater than or equal to 1.96 ($\alpha = 0.05$). The non-standardized regression coefficients, standart errors,calculated t levels and significance levels of latent variables are shown in table 3.

Table 3

Unstandardized regression coefficients, standart errors, calculated t levels and significance levels of latent variables

Latent variables	Regression weights	Stand. error	t - value	P
Study content <--- Academic staff	0.56	0.034	16.187	***
Study content <--- Facilities	0.08	0.020	3.822	***
Study content <--- Library	0.16	0.030	5.322	***

Latent variables			Regression weights	Stand. error	t - value	P
Study content	<---	Information system	0.24	0.032	7.438	***
Skills	<---	Academic staff	0.23	0.034	6.680	***
Skills	<---	Study content	0.48	0.030	16.109	***
Labour market	<---	Study content	0.47	0.034	13.731	***
Labour market	<---	Study results	0.62	0.031	20.381	***
Labour market	<---	Academic staff	-0.06	0.036	-1.511	0.131**
Perceived quality	<---	Study content	0.38	0.034	11.247	***
Perceived quality	<---	Skills	0.29	0.030	9.762	***
Perceived quality	<---	Academic staff	0.16	0.035	4.509	***
Perceived quality	<---	Administrative staff	0.005	0.019	0.252	0.801**
Perceived quality	<---	Labour market	0.33	0.031	10.788	***
Perceived quality	<---	Library	-0.06	0.024	-2.666	0.008**
Perceived quality	<---	Information system	-0.006	0.026	-0.234	0.815**
Perceived quality	<---	Facilities	-0.003	0.016	-0.159	0.874**
Satisfaction	<---	Perceived quality	0.95	0.015	61.936	***
Image	<---	Satisfaction	0.89	0.019	45.800	***
Loyalty	<---	Satisfaction	0.93	0.030	30.993	***
Loyalty	<---	Image	0.13	0.026	4.919	***

Entries *** in column P mean that $p < 0.001$ or p is equal to the value entered in the column.

** - the latent variables are not statistically significant

The figures displayed in Table 3 show that the administrative staff, library, university information systems, facilities have no statistically significant effect on the student-perceived quality. The results also indicate that the academic staff competencies and attitudes have no statistically significant effect on the students' assessment of their own readiness for the labour market.

Figure 2 helps to better understand the interrelations between the latent variables and their effects. For example, it is clear that the programme content and the study results (acquired skills and readiness for the labour market) as well as academic staff assessment affect the student-perceived quality.

The unstandardized and standardized regression weights shown in tables 3 and 4 explain the intercorrelations between the latent variables – the higher the regression coefficient, the more exogenous factors have an effect on the endogenous factor.

Table 3

Standardized factor loadings of the latent variables

Latent variables			Standardized regression weights
Study content	<---	Academic staff	0.48
Study content	<---	Facilities	0.08
Study content	<---	Library	0.16
Study content	<---	Information system	0.23
Skills	<---	Academic staff	0.23
Skills	<---	Study content	0.55
Labour market	<---	Study content	0.45
Labour market	<---	Skills	0.52
Perceived quality	<---	Study content	0.36
Perceived quality	<---	Skills	0.24
Perceived quality	<---	Academic staff	0.13
Perceived quality	<---	Labour market	0.33
Satisfaction	<---	Perceived quality	0.97

Latent variables			Standardized regression weights
Image	<---	Satisfaction	0.85
Loyalty	<---	Satisfaction	0.85
Loyalty	<---	Image	0.12

The unstandardized regression weights explain the percentage point deviation of the endogenous construct if the value of the exogenous construct changes by 1. The standardized regression weights, however, show the amount of the standard deviation of the endogenous construct if that of the exogenous construct changes by 1 point. For example, if the latent variable “Study content” grows by 1 point, the evaluation of perceived quality will change by 0.38.

Schematic figure 2 provides for a better understanding of the mutual effects of the various factors influencing loyalty. Thus, for example, it is clearly seen that the education service process and its results influence the student-perceived quality as well as indirectly also their satisfaction and loyalty. The perceived quality has a direct effect on satisfaction, which, in its turn, influences the image perception and formation of the university loyalty. The image as well has a positive effect on the formation of loyalty.

Table 2 shows the unstandardized and standardized regression weights of the factors. These weights suggest the significance of the factor correlation – the higher the regression weight, the more the exogenous factor facilitates the changes of the endogenous factor.

Table 2 makes the author conclude that namely the factor “Contents” (unstandardized regression weight 0.38) has the biggest effect on the perceived quality evaluation. The respective indicators are “how much the study process has facilitated the motivation to study” or how interesting and exciting it has been to a student as well as “the study course offer” and “interesting content of study courses”, that is, how interesting and useful the study programme content on the whole has been to each particular student as a receiver of the service.

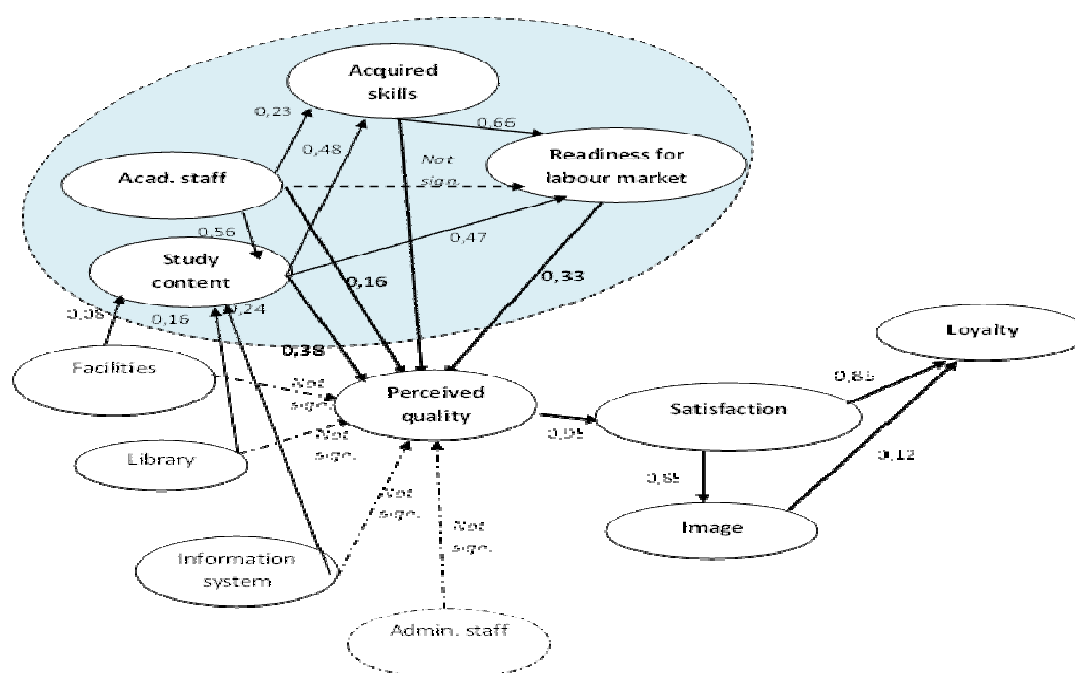


Figure 2. Results of testing the hypotheses

Source: designed by the authors

Besides, the factor “Contents” has a significant effect on the factor “Skills” (unstandardized regression weight 0.48) and factor “Readiness for Labour Market” (regression weight 0.47). This can be explained by an argument that the more interesting and useful the study process has seemed to a student as a customer, the higher

the evaluation of the acquired service results – the skills and readiness for labour market or if the process has been interesting and useful the overall acquired result also is useful and highly evaluated.

Besides, the effect of the factor “Skills” on the factor “Readiness for the Labour Market” also is essential and comparatively high – regression weight being 0.62. This means that students are aware of the significance of the acquired skills in the labour market.

However, the evaluation of the study process results “Skills” and “Readiness for Labour Market” has a statistically lower influence on the perceived quality assessment – respectively the regression weights 0.29 and 0.33. Moreover, the factor “Quality of Academic Staff” has a statistically significant, but comparatively low effect on the perceived quality – regression weight of 0.16. However, the factor “Quality of Academic Staff” has a relatively high effect on the factor “Contents” with the regression weight 0.56. It can be explained by the fact that the skills of the academic staff to deliver their courses in the way that is interesting for students have a rather significant effect on student evaluation of the quality of academic staff as well as the study process itself and the delivery of courses.

The hypothesis on the effect of the arrangement of the study premises (or the influence of the surrounding environment) on the perceived quality was denied (the correlation turned out to be statistically insignificant). However, as a result of the data analysis, it was revealed that the premises have a statistically relevant, although comparatively small, effect on factor “Contents” (regression weight – 0.08) which can be explained by the fact that premises represent a part of the study process and can influence the implementation of the study process, however the factor does not have a direct effect on the student-perceived quality of a service as a such.

From the above-mentioned models it can be concluded that in the delivery of the study service and evaluation of the student-perceived quality the importance belongs to the study process itself and namely the study courses and contents of the study courses in the study programme and how attractively these courses are delivered and how much of useful information students can acquire in these courses. One of the most significant factors in the study course evaluation is the “Quality of Academic Staff” or how much students appreciate the knowledge and skills of the academic staff to deliver the knowledge as well as how positively the attitude of the academic staff to students has developed. Thus in the delivery of the service that is knowledge-based customers focus on the contents of the service itself and specific service results and here the most important role belongs to the knowledge providers or key implementers of the service. The service support elements or support processes, such as the administrative staff, library and information system, turned out to have a statistically irrelevant effect on the customer-perceived quality. It does not mean that these support elements do not present any importance to the student, but rather that with the service quality the student associates the contents or the key process itself, not the support processes. It is interesting that the factor “Skills” which is one of the most significant service results turned out to have a rather low regression weight that suggests a relatively small effect on the perceived quality. This can be explained by the fact that the factor “Skills” as the added value of the study process is not explained to students or they do not understand it. The result-oriented study process has been relatively recently introduced in the European *Higher Education Area* therefore it is possible that the communication about these changes (i.e. the studies based on the learning outcome) in the study process has not yet reached the direct service beneficiaries (students) or the public. Studies as a service is a lasting process (for several years) therefore in their evaluation students focus more on the process itself than the result and as skills are acquired gradually, it is more complicated to evaluate the acquisition of the result (skills) – the stage between the beginning and end of the process is long and during the process the students tend to forget both the initial expectations as well as the fact that before the studies they did not have these skills or the skills were relatively low developed.

The student satisfaction with the study process is, however, significantly and to a large extent influenced by the factor of perceived quality – regression weight 0.95. Here we also see that student satisfaction is connected with the process implementation rather than the processes supporting the key process. It is possible that the support processes do not facilitate satisfaction, however if they were of inappropriate quality they would facilitate student dissatisfaction. The authors came to these conclusions guided by Herzberg’s two factor theory stating that hygiene factors, in this case, support processes, do not facilitate satisfaction; however their absence could facilitate dissatisfaction. As it was suggested by the analysis of individual elements, students mostly were very satisfied with the existing support processes or in some cases they did not have information on the indicators (for example, e-courses and internationalization aspects) and the highest level of satisfaction was

suggested by the indicators that characterized the work of the administrative staff, which represents the elements of the support process. It is possible that if the indicators were dissatisfactory, the effect of the administrative staff on satisfaction would be statistically significant and with a negative regression weight. However, it would be a task of another research where other research methods would have to be used and it does not refer to the issues and tasks of this research.

The satisfaction factor has a statistically significant as well as very high effect on the organization image (regression weight 0.89). Here we must take into account that the student has evaluated the organization image from his point of view. Consequently, the higher will be the student satisfaction, the more his evaluation of the organization image will correspond to the image built by the organization. In this research the author asked respondents to evaluate the image in accordance with the image dimensions suggested by the organization (i.e. prestigious HE institution, generally good HE institution, innovative HE institution and the HE institution that contributes to economy and society).

The highest effect on loyalty belongs to the satisfaction factor (regression weight 0.93). The image effect on loyalty also is rather significant – regression weight 0.13. In this case the combination of a positive image and loyalty is very important as in this research loyalty was explained by two significant indicators: the willingness to recommend and willingness to choose the higher education institution repeatedly. In the case of a positive image (and in this case the student himself assesses the image) there is a dual effect – the willingness to recommend popularizes the organization name which, in its turn, can attract new students. Besides, the student himself, being confident of the organization professionalism and quality, is ready to choose the services of this organization repeatedly.

6. CONCLUSIONS

As the authors defined in the hypotheses put forward at the beginning of the paper, the factors that determine loyalty are the perceived quality, satisfaction and organization image. At the time when:

- the demand for undergraduate studies is decreasing due to the fall in the number of the leavers of secondary schools,
- due to the unstable economic situation the persons who have completed their undergraduate studies more carefully consider their decision on continuing their studies at the next level as well as the provider of the next education service,
- the issue of lifelong learning is becoming more common and popular among the public including also further education and the most appropriate course providers for further education are sought,

The providers of education services must more carefully consider how to provide for the loyalty of the existing students, i.e., their willingness to choose a particular higher education institution and willingness to recommend the organization to others.

Regarding the student-perceived quality the survey partly confirmed the hypothesis. It was not possible to measure the influence of such factors as “internationalization” and “e-courses” because of missing data. The factors “administrative staff”, “information system”, “library” and “facilities” have no statistically significant influence on student perceived quality. All other hypotheses were confirmed by the survey.

From the analysis made the authors would like to point out the following key conclusions that should be taken into account for the improvement of the study process:

- currently the most important elements in the provision of the study process are the academic staff that pass over their knowledge, study content and teaching methods, acquired skills and readiness for the labour market. If the evaluation of two factors rises among students, there will also be a significant rise in the perceived quality, satisfaction as well as loyalty.
- currently e-courses as a study process support tool is underemployed in the study process, consequently, it is impossible to evaluate the effect of these e-courses on the student-perceived quality and satisfaction in the existing selection group that could also be referred to the general cluster.
- Under the globalization internationalization represents one of the integral elements in the implementation of HE processes. At the moment students have insufficient information (or it is not searched) on the internationalization in HE (exchange opportunities, availability of guest lecturers).

Consequently, it is difficult to evaluate the influence of internationalization on the customer-perceived quality and satisfaction.

On the whole the model of student-perceived quality and loyalty in higher education can serve as a barometer of the higher education quality and student satisfaction that will allow comparing student perceived quality over various years at the higher education institution, among different higher education institutions and possibly on the international level.

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Appendix 1

The factors and their indicators as presented in the questionnaire

Factors	Indicators
Facilities	The equipment of lecture rooms is appropriate for studies
	The equipment of seminar rooms is appropriate for studies
	The equipment of labs is appropriate for studies
	Computers are freely available at my university
	Wireless internet is freely available at my university
Academic staff	There are competent academic staff working at my university
	The attitude of the academic staff towards students is favourable
	The consultations of academic staff are freely available
Administrative staff	The attitude of administrative staff towards students is favourable
	The academic staff support is helpful in the study process
	I am satisfied with the working hours of the administrative staff.
Library	The study literature is freely available at my university library
	The databases subscribed to by our library are very useful in the study process
Study content and planning	The study process favoured my motivation to study
	I am satisfied with the study courses available in the study programme
	The content of the study courses was interesting and useful
	The sequence of the study courses in the study programme was logical
	I am satisfied with the lecture schedule

E-courses	I am satisfied with the e-course offer in the study programme
	The available e-courses in the study program lightened the study process
Information system	The necessary information about the study process was easy to find
	The necessary information about the study process was easy to find in the university webpage
	I am satisfied with the options of the university information system
Internationalization	I am satisfied with the student international exchange programmes offered by my university
	I am satisfied with the offer of international guest lectures at my university
Readiness for labour market	The acquired knowledge and skills will raise my competitiveness in the labour market
	I have acquired the necessary professional skills during my studies
	During the studies I have developed the skills for the application of the theoretical knowledge in practice
Acquired skills	I have acquired good theoretical knowledge in my study area
	I have developed the skills for finding a creative solution for problems of various level of difficulty
	I have acquired the skills for working with information (to evaluate, to analyse, to systematize it) during my studies
	I have developed critical thinking during my studies
	I have acquired the skills for making decisions based on previously made information analysis
	I have improved my written communication skills
	I have developed skills for public presentations
	I have developed skills for public discussions and justification of my opinion
	I have improved my team working skills
	I have learned the terminology of the study field in a foreign language
	I have acquired the skill to work with computer programs necessary in my study field
	I have improved the skills for organizing my work
Satisfaction	I am satisfied that I have chosen this particular study program
	I am satisfied with my experience at my university
Loyalty	I will suggest this study program for others
	I will recommend studying at my university to others

	In the light of my experience I would choose this university again
Perceived quality	The level of difficulty of this study program was suitable for me
	The study program has prepared me for the labour market
	The study program has prepared me for the next study level
	The studies at my university are qualitative
Image	My university is prestigious in Latvia
	My university fosters the development of Latvia
	My university offers an internationally recognized education
	My university is an innovative and future-oriented university