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MARKETING MECHANISM OF QUALITY MANAGEMENT IN UNIVERSITIES IN THE CONDITIONS OF COMPETITION IN THE CROSS-BORDER MARKETS OF HIGHER EDUCATION

Abstract: A complex of econometric methods is used: regression and correlation analysis to model the influence of the marketing factors on the results in the sphere of universities' quality management; and optimization method to determine the perspectives of increasing the results in the sphere of universities' quality management based on marketing factors management. The research objects are universities from different countries from Reuters Top 100: The World's Most Innovative Universities 2019. To determine the current contribution and future perspectives of using the marketing mechanism for universities' quality management in the conditions of competition in the cross-border markets of higher education. It has been found that an increase in HR marketing (employer reputation) by 26.21% leads to an increase of total patents in universities of the sample by 43.20%, an increase in their success rate by 30.16%, and an increase in commercial impact by 41.77%. It is proved that the marketing mechanism allows increasing the level of universities' quality in the conditions of competition in the cross-border markets of higher education by more than 30%.

Keywords Higher Education, Marketing, Innovative Development, University, Competition, Cross-Border Markets of Higher Education, Quality, Quality in Universities, Quality Management.

1. Introduction

In the course of its history, higher education passed several important stages of evolution, from elite to mass and general higher education (Aziz, 2010; Trow, 2010). As a result of such transformation, higher education in developed countries became an inseparable part of development. These processes predetermined the character of the

development of services, connected with higher education, and formed the corresponding demand. The presence of offer, in its turn, predetermined the tendencies aimed at the formation of demand, which, based on saturation of the considered market, took place outside of the country of the location of an educational establishment. Thus, the concept of the cross-border market of higher education

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received its market substantiation.

Additional processes that influenced the creation and expansion of cross-border higher education were also a range of additional factors, which influenced the following:

- Active privatization, which allowed market mechanisms to enter the sphere of higher education (Teixeira, 2006);
- Transformation of the role of students, according to which, they were no longer considered beneficiaries of public well-being, but acquired a status of a consumer of services (Healey, 2008);
- The globalisation of the educational environment, connected with the use of IT, selection of one language of communication and achievement of a high level of mobility, due to transport technologies and liberalisation of cross-border movement.

As a result of "marketization", educational services acquired the status of full market agents with all ensuing advantages and risks.

An important aspect of this research is identifying the key definitions. In this context, the notion of "cross-border education" is treated as the "movement of people, programmes and suppliers... across national borders" (Knight, 2006). As of now, three types of cross-border education are in the largest demand:

- Cross-border student mobility, which is connected with the private actions of students, who use the opportunities to obtain the best academic experience and improve their competencies through studying abroad (Altbach & Knight, 2006);
- Cross-border mobility of programmes, which is connected with the use of educational programmes and technologies in other countries. This type of

mobility covers the effective tools of provision of cross-border education, including franchise, joint programmes, remote education or obtaining several higher educations. At that, the student does not have to relocate to the country of the programme provider (Knight, 2005).

- Cross-border mobility of educational establishments, as providers of educational services. In this case, the service provider has to be present in the territory of the student. During such cooperation, the following forms of organisation of the educational process are used: the creation of a foreign branch, the creation of the corresponding educational establishment or the foundation of an independent educational establishment in the territory of another country (Knight, 2005).

All the above types of education differ by a range of criteria, which define the character of competitiveness and quality of the proposed services. Thus, the possibility to obtain cross-border education in the territory of own country allows avoiding relocation and creates an additional competitive advantage. On the other hand, relocation to the country of the educational service provider allows for a better perception of the cultural specifics of the educational programme. According to this, each form of cross-border education has its values, the identification of which creates competitive advantages.

Under the influence of globalization, "knowledge economy", demographic changes, and digitalization, modern universities acquire a new role in the economy. In the 20th century, universities in most countries performed the role of suppliers of skilled personnel for entrepreneurship. They were oriented mainly at domestic markets of educational services and were to satisfy the domestic demand for

them. A lot of universities relied on state support, with government orders for the training of personnel in the economy.

In the 21st century, market relations in the sphere of educational services reached such a high level of development that paid education is more popular, and the necessity for government order disappears. The demographical crisis, which is observed in a lot of developed and intensively developing countries in the form of a decrease in population, leads to a reduction in the demand for higher education services. The reduction of government finances and limited opportunities for selling services in the domestic market stimulates universities to internationalization of their activities, which is an important indicator during the compilation of university rankings. Remote training allows providing higher educational services all around the world.

In the conditions of competition in the cross-border markets of higher education, there is a need for rapid innovative development of universities, which is a serious challenge for quality management of universities, which has to become more flexible. This determines the importance of the search for the mechanisms of university's innovative development in the conditions of competition in the cross-border markets of higher education. The following hypothesis is offered: the marketing mechanism is prospective and will be in high demand during quality management in universities; the goal of this paper is to determine the current contribution and future perspectives for using the marketing mechanism for quality management in universities in the conditions of competition in the cross-border markets of higher education, and to reveal the possibility to use certain elements of the marketing mechanism to improve the level of quality and competitiveness of universities, their coordination and balancing.

2. Literature Review

The methodological provisions of cross-border education in its modern understanding were formed in the early 2000s. They were connected with the emergence and dissemination of the possibility for students, educational programmes and technologies, and educational establishments. The key provisions of the methodology of cross-border education were developed in Altbach & Knight (2006), Aziz (2010), Healey (2008), Knight (2005; 2006), Trow (2010), Teixeira (2006) and Youssef (2014). The above scholars identified a range of theoretical provisions, including the determination of the essence of cross-border education, its classification, analysis of the mechanism of provision of quality, etc.

The scientific framework of quality management in universities is set in the works of Alharbi et al. (2020), Bratukhina et al. (2020), Chayanon et al. (2020), Karnai et al. (2021), Magalhães et al. (2019), Miao et al. (2021), Ngo et al. (2021), Rehman and Noman (2021).

Marketing activities of universities are studied in detail in the works Al-Thagafi et al. (2020), Estelami (2020), Kataeva et al. (2017), Saenko et al. (2016), Sozinova (2018), Sozinova et al. (2017), Sozinova and Fokina (2015), Fokina et al. (2018), Fuchs et al. (2020), Ofori et al. (2020), and Quach et al. (2020). Various aspects of innovative development of universities are also considered in the works of Lysova et al. (2020), Popkova et al. (2021), Saveleva et al. (2018), Savelyeva et al. (2019), Savelyeva and Timkina (2021), and Sozinova (2018).

However, the marketing mechanism of universities' quality management in the conditions of competition in the cross-border markets of higher education remains insufficiently studied and requires further elaboration – which is done in this paper.

3. Materials and methodology

Very often, research results depend on a point of view and methodological tools that are involved in the process of formation and verification of the scientific hypothesis. In the case of higher education, it is very important to correctly determine the research object and its basic parameters. In this regard, higher education can be considered from different angles:

- As a public phenomenon, connected with the receipt of knowledge;
- As an element of infrastructure, which serves the interests of the economy and ensures its intellectual capital;
- As an independent sector of the economy, which has all characteristics of the market, including competition, marketing strategies, bankruptcy, etc.

Each of the above visions treats the notion of quality differently. Thus, in the first case, the quality of educational services is determined by the number of people with higher education, the general level of society's education, etc. The second approach focuses on the quality of intellectual capital of the economic sectors, with the percentage ratio of personnel with higher education to the total number of employees, correspondence to the office held, presence of competencies, etc.

Approach to higher education as a separate sector of the economy significantly expands the limits of research of quality. This is primarily connected with the competition. The quality of services, offered by universities, is one of the most important components of their competitiveness. This vision dominates the managerial processes, connected with internal management, risk management, interaction with the external environment, including coordination of demand and offer of educational services, etc.

Thus, quality management in a university, which is considered from the position of a market subject, allows using a common methodology of quality management at market companies with its correction according to the sectoral specifics.

It should be taken into account that marketing mechanisms are important tools of development in the market economy. Their main advantage is connected with the close interaction with market processes. They cover marketing research and development of a product according to the market requirements, selection of the optimal methods of product promotion, rational HR provision, optimisation of the place and process of provision of service, etc. Under such conditions, a correct organisation of the marketing mechanism of work of educational establishments leads to important effects, which are connected with competitiveness, quality and effectiveness of educational business.

According to this, the methodological basis of studying the marketing mechanism of quality management is marketing mix (7p), which includes "product", "price", "place", "promotion", "people", "process" and "physical evidence". The marketing mix is the main element of any competitive strategy. It is aimed at the development of an effective marketing mechanism, which allows achieving the goals of the competitive struggle in the most optimal way. Elements of 7p in different combinations could be included in mathematical models, which allow determining the level of their influence on the studied processes.

To check the offered hypothesis, we use a range of econometric methods: regression and correlation analysis to model the influence of the marketing factors on the results in the sphere of management of universities' quality, and optimization method to determine the perspectives of increasing the results in the sphere of management of universities' quality based on marketing factors management. The

hypothesis is deemed proven if each of the designated results in the sphere of management of universities' quality could be increased by more than 30% through marketing factors management.

The research objects are universities from Reuters Top 100: The World's Most Innovative Universities 2019 (Ewalt, 2021). General data on the universities of the sample are shown in Figure 1.

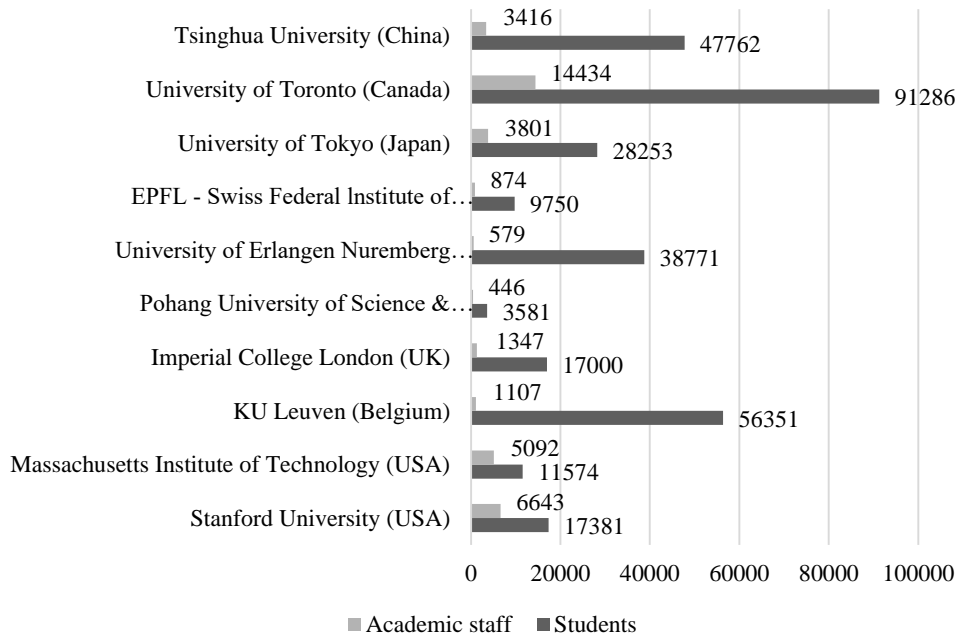


Figure 1. The number of academic staff and students in universities of the sample (Reuters Top 100) in 2019.

Source: compiled by the authors based on Ewalt (2021).

As shown in Figure 1, the number of academic staff and students in universities of the sample (Reuters Top 100) in 2019 is differentiated, which emphasizes the representative character of the sample and conforms to the general distribution of the general totality. The results in the sphere of innovative development are taken from Reuters Top 100 (Ewalt, 2021) and include the total patents, success rate, and commercial impact.

The coefficient of variation of the number of lecturers is higher (114 %) than the corresponding indicator for the number of students (84 %). The coefficients of load per lecturer are also different: from 2.3 in KU Leuven (Belgium) to 67.0 students at the

University of Erlangen Nuremberg (Germany). The coefficient of variation for this indicator equals 121.3 %. Thus, the analysed sample covers universities with different student/lecturer ratios, which is a sign of its good representativeness.

The factor analysis of the provision of the quality of universities' services implies a correct determination of endogenous and exogenous variables in the models.

Endogenous variables characterise the results of the innovative activities of the sample and include the following indicators:

- Number of basic patents (patent families) filed by the institution between 2012 and 2017;

- The ratio of patents filed by the institution between 2012 and 2017 that were subsequently granted by patent offices;
- Indicator of how often basic research originating at an institution has influenced commercial R&D activity, as measured by academic papers cited in patent filings.

Endogenous factors include absolute and relative indicators, which characterise not only the volume of innovative solutions but also their quality, which is determined by the level of their recognition.

The focus on innovative development allows using a complex criterion, which connects two main directions of universities' activities: science and education. In successful educational establishments, science ensures a large share of financial revenues, while education is the main direction of attraction and training of scientific personnel not only for the economy but also for universities. Thus, the criterion of scientific activities' success is the indirect indicator of the quality of universities' services.

Exogenous factors reflect the marketing influence on the result of the innovative activities of the universities of the sample.

The marketing factors are the following indicators, calculated by QS (2021) in World University Rankings 2021: academic reputation (branding), employer reputation (HR marketing), international faculty (product marketing), and international students (marketing of relations).

In the list of the marketing mix, these factors present four elements:

- academic reputation (branding) – “product”;
- employer reputation (HR marketing) – “people”;
- International faculty (product marketing) – “place”;

- International students (marketing of relations) – “process”.

These factors allow assessing the influence of the level of marketing feedback and the use of the university in cross-border communication on the results of its innovative activities. At that, academic reputation is the indicator of generalising the level of the university's competitiveness from the position of provision of educational and accompanying services; in fact, it reflects the level of its brand. The reputation of the employer reflects the level of universities' HR marketing and the possibility to attract more quality employees for the work. Assessment of the work of an international faculty determines the quality of provision of services, which are connected also to cross-border processes. Assessment of the foreign students' factor reflects the marketing of relations and the result of the university's involvement with cross-border educational processes. Each of the above factors is considered from the position of their influence on the innovative results of the universities' work, which determine the level of their services' quality.

The data on these factors and results are shown in Table 1.

Indicators, which are given in Table 1, demonstrate an unequal distribution of exogenous and endogenous variables, which allows using the methodology of correlation and regression analysis. It is based on the least squares method and implies the formation of regression equations by identifying the coefficients of regression and verification of the models' correctness. According to this, the results of the analysis are presented by three regression equations, which reflect the model of marketing factors' influence on the results in the sphere of innovative development, presented by variables y_1 - y_3 .

Table 1. Results in the sphere of management of universities' quality in 2019 and the marketing factors in universities of the sample for 2021.

University (country)	Results in the sphere of innovative development			Marketing factors			
	Total patents	Success Rate, %	Commercial impact score, points 1-100	Academic Reputation (branding), points 1-100	Employer Reputation (HR marketing), points 1-100	International Faculty (product marketing) points 1-100	International Students (marketing of relations) points 1-100
	Y ₁	Y ₂	Y ₃	X ₁	X ₂	X ₃	X ₄
Stanford University (USA)	728	40.8	75.2	100.0	100.0	99.7	63.6
Massachusetts Institute of Technology (USA)	1,614	44.8	169.2	100.0	100.0	100.0	91.9
KU Leuven (Belgium)	305	40	43.3	83.4	55.5	90.7	36.1
Imperial College London (UK)	317	33.4	34.4	98.5	99.8	100.0	100.0
Pohang University of Science & Technology (POSTECH) (South Korea)	349	79.7	48.8	43.0	54.6	33.8	3.0
University of Erlangen Nuremberg (Germany)	238	52.1	51.2	22.5	17.4	28	23.5
EPFL - Swiss Federal Institute of Technology Lausanne (Switzerland)	235	39.6	58.1	80.4	80.0	100.0	100.0
University of Tokyo (Japan)	971	52.6	32.5	100.0	99.6	10.7	26.1
University of Toronto (Canada)	286	36	33.4	99.3	86.8	97.9	94.1
Tsinghua University (China)	834	62.7	34.8	98.2	98.6	55.3	29.7

Source: compiled by the authors based on Ewalt, (2021), QS (2021).

4. Results

The obtained results of the correlation and regression analysis allow determining the connection and influence of marketing factors on the indicators of innovative development's results. Conceptually, they are a marketing mechanism, which contains different factors and influences the results of the universities' activities. Depending on the

coefficients, which are obtained as a result of the analysis, each model implies the use of different proportions of marketing factors to improve the resulting indicators of the universities' innovative development. Based on this, we determine the prospects for using the marketing mechanisms of quality management in cross-border markets of higher education.

To determine the perspectives of using the marketing mechanism of management of universities' quality in the conditions of competition in the cross-border markets of

higher education, let us use the results of regression analysis of data from Table 1 (Figures 2-4).

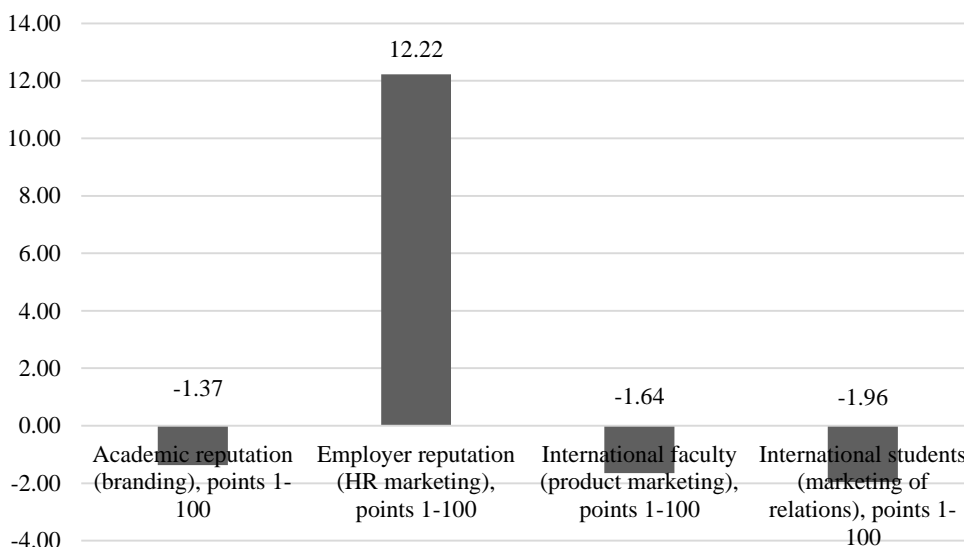


Figure 2. Regression coefficients in the model of dependence of total patents on the marketing factors in universities of the sample.

Source: calculated and built by the authors.

Values in Figure 2 are regression coefficients of the considered factors. They demonstrate the level of the impact of exogenous factors of the model on the endogenous factor - Number of basic patents (y_1). According to Figure 2, the growth of employer reputation by 1 point leads to a growth of total patents in universities of the sample by 12.22.

The influence of other factors of the model has a slight negative character. This means that exogenous factors, which characterise the development of the brand, product marketing and marketing of relations in the existing conditions, are not of top priority from the position of their growth. Moreover, the work on the growth of any of the given factors, according to the model's connections, will lead to a decrease in the total number of university patents.

Such a connection between the resulting variable and the factors with negative values of regression coefficients allows assuming a restraining impact of processes that are aimed at cross-border markets of innovative activities of universities. A possible reason for this is the distraction of a part of the resources to the formation and development of international ties (product marketing, marketing of relations) or general improvement of reputation (branding). Such a phenomenon is inherent to universities at a certain stage of the development cycle and could be eliminated in the future. That is why the efforts on the improvement of the marketing mechanism of quality management should be aimed at the balancing of marketing components. The main resource for this balancing could be the factor of HR Marketing (employer's reputation).

Therefore, the only marketing factor that positively influences total patents and allows improving the balance of factors in the context of the improvement of the resulting indicator is HR marketing. The following regression equation is obtained: $y_1 = -38.84 - 1.37x_1 + 12.22x_2 - 1.64x_3 - 1.96x_4$. The change in total patents by 60.88% (multiple correlations) is due to the influence of the

marketing factors that are included in the model. The explanation of the change in the endogenous variable, which is not taken into account in the model, is possible through other marketing factors, which require additional research. Empirically, these factors could be connected with other elements of marketing mix 7p, including price, promotion and physical evidence.

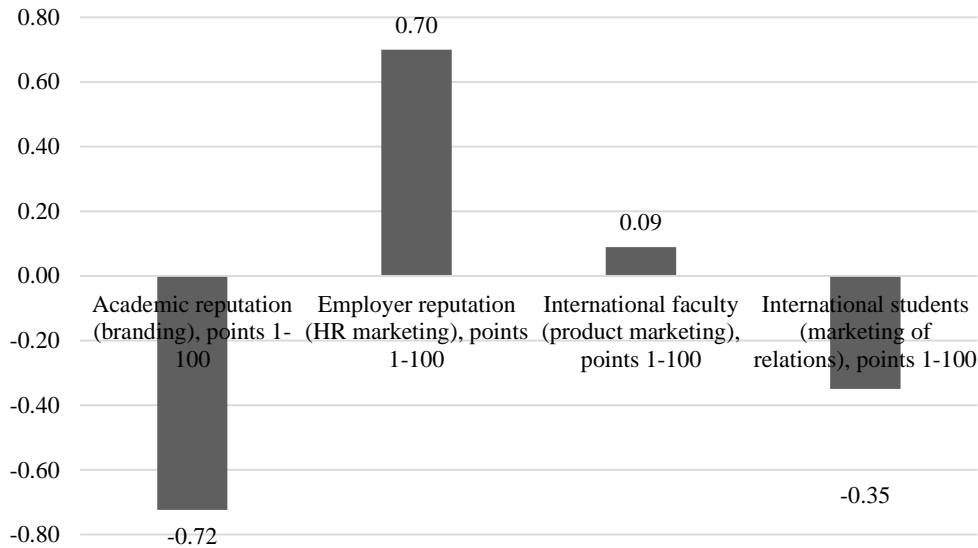


Figure 3. Regression coefficients in the model of dependence of success rate on the marketing factors in universities of the sample.

Source: calculated and built by the authors.

Similar results are peculiar for the second model, which defines the influences of the same endogenous factors on Success Rate (y_2). In this model, the level of differentiation of the regression coefficients is much lower. The negative value of the coefficients is peculiar only for academic reputation (branding) and international students (marketing of relations). The factors of employer reputation (HR marketing) and international faculty (product marketing) have a slight positive influence on the successfulness of the resulting indicator. In this case, the HR factor (to a larger extent) and the level of development of conditions for cross-border cooperation, which is presented by the factor of international faculty (to a lower extent) define the level of

success of the innovative activities of universities.

Similarly to the previous model, the first and fourth exogenous factors, under the existing conditions distract resources from the provision of the quality of patents of the studied universities. Under such conditions, the development of academic reputation or increase in the number of foreign students will not allow improving the resulting indicator. In such conditions, the prospects for improvement of the quality of innovative development are due to the development of management factor of HR-Marketing (employer's reputation) or marketing of relations (international students). In the marketing mix, these factors characterise

“people and “process”.

According to Figure 3, growth of employer reputation by 1 point leads to growth of success rate of universities of the sample by 0.70%. Growth of international faculties by 1 point leads to growth of success rate of universities of the sample by 0.09%. Therefore, the marketing factors that positively influence the success rate of universities are HR marketing and product marketing. The following regression equation is obtained: $y_1 = 65.96 - 0.72x_1 + 0.70x_2 + 0.09x_3 - 0.35x_4$. The success

rate of universities is by 93.47% (multiple correlation) due to the influence of marketing factors.

That is, the change in the resulting indicator by more than 93 % can be explained with the help of the equation's factors. Similarly to the previous case, the model does not take into account such elements of the marketing mechanism as “price”, “promotion” and “physical evidence”.

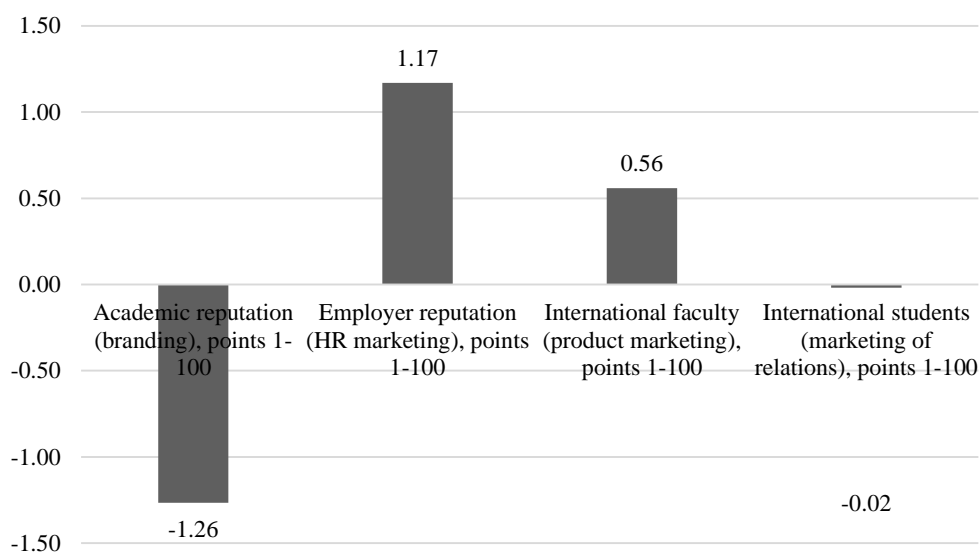


Figure 4. Regression coefficients in the model of dependence of commercial impact on the marketing factors in universities of the sample.

Source: calculated and built by the authors.

The third model reflects the factor dependence of the commercial impact score on the above marketing factors. Regression coefficients in this model have a medium spread. The negative influence on the resulting indicator is peculiar for academic reputation (to a larger extent) and international students (to a much lower extent). The positive influence is observed with employer reputation (to a larger extent) and international faculty (to a lower extent).

Similarly to the second model, the elements of the marketing mechanism of quality

management and the level of success of the commercial implementation of developed patents directly depend on the factor of staffing and effectiveness of the place of provision of cross-border services in the sphere of higher education.

The negative influence of the elements of the marketing mix, which characterise "product" and "process", is a sign of the existence of critical directions, which require improvement and balancing.

According to Figure 4, growth of employer reputation by 1 point leads to growth of

commercial impact of universities of the sample by 1.17 points. Growth of international faculties by 1 point leads to growth of commercial impact of universities of the sample by 0.56 points. Therefore, the marketing factors that positively influence the commercial impact of universities are HR marketing and product marketing. The following regression equation is obtained: $y_1=30.96-1.26x_1+1.17x_2+0.56x_3-0.02x_4$. Commercial impact universities is by 44.82% (multiple correlation) due to the influence of the marketing factors, which are present in the model. The reasons for the change in the factor result, which is ignored

in the model, could be other elements of the marketing mechanism of quality management, in particular “price”, “promotion” and “physical evidence”.

Thus, the universal marketing factor that positively influences all results of management of universities’ quality is HR marketing (employer reputation, x_2). Based on this and the obtained regression equations, we determine the perspectives of using the marketing mechanism for the management of universities’ quality in the conditions of competition in the cross-border markets of higher education (Figure 5).

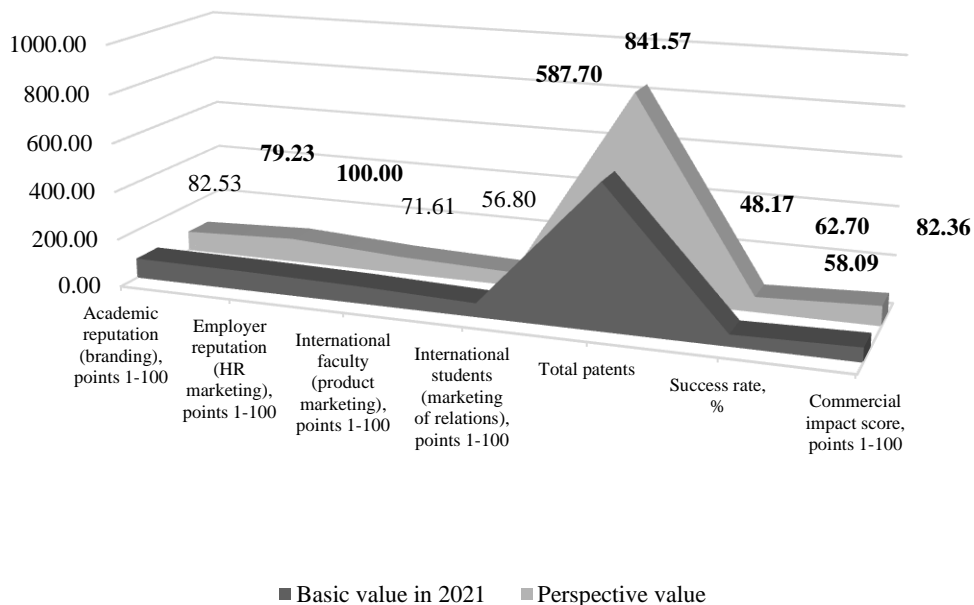


Figure 5. Perspectives of using the marketing mechanism for management of universities’ quality in the conditions of competition in the cross-border markets of higher education.

Source: calculated and built by the authors.

According to Figure 5, perspectives for using the marketing mechanism for a university's innovative development in the conditions of competition in the cross-border markets of higher education are connected to the growth of HR marketing (employer reputation) from 79.23 points to 100 points (by 26.21%). Due to this, total patents in universities of the

sample will grow from 587.70 to 841.57 (by 43.20%), their success rate will grow from 48.17% to 62.70% (by 30.16%), and commercial impact will grow from 58.09 points to 82.36 points (by 41.77%).

These results determine the domination of the factor “people” in the marketing

mechanism of quality management in universities, as well as the presence of a certain potential positive influence on two of the three resulting variables of the indicator of international faculty, which denotes "place" in the marketing mechanism.

Therefore, these factors are the main elements of the marketing mechanism that allow the research objects to improve their indicators of the quality of services and to improve their competitive position.

The level of balance of the elements of the marketing mechanism of quality management is rather low. According to this, in quality management of universities, the achievement of the result of innovative development in the cross-border market is achieved through isolated factors (primarily quality intellectual potential), while other elements of this mechanism are used in a limited way. On the one hand, such a situation aggravates the possibilities of the competitive struggle of universities in the cross-border market of higher education; on the other hand, it is objectively connected with the young age of this market.

The market of cross-border services in the sphere of higher education began acquiring institutional features only in the early 2000s. Since then, many tasks were solved, including the creation of a system of quality control of services, given the cross-border character of their provision. However, the studied market does not have the parameters of a mature market with a stable structure and shares of participants, stable parameters of competition, adopted criteria of services' quality, etc. Depending on the goals, localisation, specialisation and conditions of market regulation, different universities are at different stages of market development. According to this, the use of the marketing mechanisms for many of them requires additional balancing and coordination.

The main marketing asset is personnel. This is the result of the long work of educational establishments, aimed at this sector of the provision of education's quality. As for the

research of service quality, in the process of evolution of the concept of cross-border higher education, a range of institutions that are aimed at the provision of services' quality, were created. At present, these institutions comprise a comprehensive system, which includes the following:

- Bologna Process;
- Global Initiative on Quality Assurance Capacity (GIQAC);
- African Quality Assurance Network (AfriQAN);
- Arab Network for Quality Assurance in Higher Education;
- Asia-Pacific Quality Network (APQN);
- Association of African Universities;
- International Network for Quality Assurance Agencies in Higher Education (INQAAHE);
- Quality Assurance Support Programme for African Higher Education;
- Red Iberoamericana para la Acreditación de la Calidad de la Educación Superior;
- UNESCO's Division of Higher Education (Youssef L., 2014).

The above institutions of control and provision of quality of cross-border services in the higher education market are important elements of the marketing mechanism since their requirements are imperative and mandatory for implementation in the corresponding region. Such an approach is actual as to students and as to the provider of educational services, regardless of the tool of their provision.

Thus, globalisation influences the systems of higher education. This influence is connected with the factors of a different character, including technological progress, domination of the liberalisation policy, social processes, etc. However, there is no clear proof that globalisation is the main factor defining the development of cross-border education. This fact should be taken

into account, based on cultural, political and social conditions, as well as the level and stage of development of economic systems and spheres of educational services of each country. Based on this, English-speaking universities have advantages, since English is the language of global educational communication.

Thus, by improving any element of the marketing mechanism, we cannot obtain a significant improvement in the total result, since the result depends on many factors. That is why an important direction of improving the marketing mechanism of quality management of services in cross-border markets of higher education is balancing the level of development and adaptation of all factors.

5. Discussion

The models obtained in this work are important results of the research, which allow forecasting the influence of various variables on the level of the quality of educational services. They also allow determining the character and level of the influence of the marketing factors, which denote the elements of the marketing mechanism, resulting in indicators of innovative development and competitiveness. Regression coefficients at each factor demonstrate the achievement of the corresponding level of competitiveness.

Also, they allow identifying which factors had a restraining influence on the result. Thus, the research results are aimed at evaluating the model of interaction of the studied factors.

The methodology allows – based on the results obtained – modelling the development of the situation in the future, but also under the condition of stability of the current conditions.

Future studies should be aimed not only at using the retrospective methods, based on extrapolation of the data of the past periods but also at the use of more active methods,

expert character, risk management, etc. Due to this, there is an opportunity to determine the probability of changing the vector or level of the impact of a certain element of the marketing mechanism on the considered indicators.

6. Conclusion

Thus, it has been proved that the marketing mechanism allows increasing the level of quality of universities in the conditions of competition in the cross-border markets of higher education by more than 30%. In particular, an increase in HR marketing (employer reputation) by 26.21% leads to an increase in total patents in universities of the sample by 43.20%, an increase in their success rate by 30.16%, and an increase in commercial impact by 41.77%.

However, we have found a contradiction in the marketing mechanism of management of universities' quality in the conditions of competition in the cross-border markets of higher education – such marketing factors as academic reputation (branding) and marketing of relations (attraction of international students) decrease all results in the sphere of university's innovative development. Therefore, when using the marketing mechanism of management of universities' quality in the conditions of competition in the cross-border markets of higher education it is necessary to provide large flexibility and targeted management of the marketing factors.

The basic direction for improving the processes of attraction of foreign students to innovative scientific developments is the use of the optimal tool for cross-border higher education. Depending on the market at which the efforts of the educational establishment are aimed, the use of the tools of services' provision may differ significantly, which requires additional research.

An important problem of quality management of educational services in the

cross-border market, according to the research results, is a low level of balance of the elements of the marketing mechanism. Such a situation is the objective result of the development of the system of education, in which focus is made on personnel's quality.

However, based on the marketing concept, achievement of a high level of quality or provision of competitiveness requires a well-coordinated interaction of all elements of the marketing mechanism.

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