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EFFECTIVENESS OF QUALITY MANAGEMENT DURING IMPLEMENTATION OF INNOVATIVE PROJECTS AS THE BASIS OF COMPANY'S STRATEGIC DEVELOPMENT

Abstract: *The purpose of this research is to develop a risk-oriented approach to quality management during implementation of innovative projects, which would allow achieving high effectiveness and ensuring company's strategic development. Originality of this research consists in considering innovative activities from the point of view of consequences for quality, in the interests of company's strategic development – unlike other studies, in which emphasis is made on short-term advantages of entrepreneurship's innovative activity, which causes large risks. Contribution of this research to development of the theoretical science consists in specifying the essence and structure of product quality in entrepreneurship. The components of quality are distinguished and substantiated, and a treatment of implementation of innovative projects from the positions of effectiveness of managing products' quality is offered. The authors' treatment is used for systematizing the components from the positions of the target result in the sphere of product quality, by means of innovations and expenditures for achievement of result for quality; they are also classified by the criterion of significance and requirements to effectiveness of quality management, evaluated through ratio of results to costs. Practical significance of the research consists in the fact that the developed scientific and practical recommendations could be used for ensuring effectiveness during quality management while implementing innovative projects for company's strategic development. An additional advantage of the developed recommendations is consideration of the specifics of countries of each distinguished category, as well as the specifics of various market structures.*

Key words: *Quality; Quality management; Innovative projects; Strategic development.*

1. Introduction

Quality is the basis of company's strategic development, as it determines its position in the market in the long-term. One of the key

mechanisms of increasing company's products' quality is implementation of innovative projects. At the same time, the innovative activities of entrepreneurship are connected to a lot of risks, including for

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quality of manufactured and realized products.

One of the risks is excluding quality from the list of sought goals of implementing company's innovative projects. The most popular goal of innovative activities of entrepreneurship that are not connected to increase of quality is reduction of production and realization costs. Externally-oriented innovations envisage reduction of prices in this case. Due to manifestation of innovative activity, company's products become more accessible in terms of price and more attractive for the consumer audience. Innovative activity allows large companies to perform price dumping, ousting their rivals from the market.

In this case, internally-oriented innovations are aimed at increasing the company's revenues due to stable volume of sales with fixed prices. In practice, this often takes the forms of gaining "scale effect", when a company manufactures and sells products in large volumes, which allows for certain reduction of costs, as compared to rivals.

In case of high loyalty of consumers and relatively stable demand, as well as moderate fluctuations of prices in the target market, a company could achieve higher profitability as compared to rivals. In both described cases, reduction of costs could take place due to reduction of personnel, attraction of less skilled personnel, and purchase of worse raw materials – which leads to reduction of product quality.

Another risk is connected to orientation at one or several components of product quality during the implementation of innovative projects – which could negatively influence other components of quality. For example, new qualities of products, provided by innovations, could strengthen the products' brand but have not value for consumers – thus, satisfaction of their demands is not improved. Similarly, improved satisfaction of the needs due to innovations could be connected to increase of ecological costs of production and consumption of products,

which are one of the components of quality for progressive consumers.

Thus, there is a need for a risk-oriented approach to quality management during implementation of innovative projects. Apart from conforming to the interests of company's strategic development, this approach should ensure effectiveness of quality management. Effectiveness envisages finding and supporting the optimal balance (ratio) of results and expenditures. The existing research literature considers the problem of quality management during implementation of innovative projects only fragmentarily.

A gap in the modern system of scientific knowledge is the absence of a clear systemic idea of company's products' quality. This fundamental gap hinders the theoretical and empirical study of the influence of entrepreneurship's innovative activity on its products' quality – for the essence of quality requires specification. The purpose of this research is to develop a risk-oriented approach to quality management during implementation of innovative projects, which would allow achieving high effectiveness and ensuring company's strategic development.

Originality of this research consists in considering innovative activities from the point of view of consequences for quality, in the interests of company's strategic development – unlike other studies, in which emphasis is made on short-term advantages of entrepreneurship's innovative activity, which causes large risks.

Apart from introduction, literature overview, description of materials and methods, and conclusion, this paper contains three research parts. The first part is devoted to determination of the quantitative influence of innovative projects, which are implemented in entrepreneurship, on products' quality. The second part contains a qualitative analysis of implementation of innovative projects from the positions of effectiveness of managing products' quality. The third part

reflects the scientific and practical recommendations (policy implications) for provision of effectiveness of quality management during implementation of innovative projects for company's strategic development.

2. Literature Review

The theory and practice of implementation of innovative projects in entrepreneurship are described in the existing research literature in detail. Thurner (2018) performs a critical research of innovations and offers the alternative approaches to their implementation. Huang and Li (2018) substantiate that leveling of resources softens the interconnection between the strategy of ecological innovations and effectiveness of green innovations.

Popkova et al. (2018 a) determine the problems of the existing regulatory framework of formation of the innovative economy in Russia.

Bonacina Roldan et al. (2018) determine the interconnection between favorable conditions for innovations in technological parks, created innovations, and effectiveness of companies. Segarra-Ciprés and Bou-Llugar (2018) deem it necessary to look for outside knowledge for innovations and emphasize the role of the innovative strategies of companies and sectorial context. Hanifah et al. (2019) point out that internal factors could improve the effectiveness of innovations with the help of the innovative culture with the subjects of small and medium entrepreneurship.

Wu et al. (2020) consider the imitational and innovative connection, search for external knowledge, and the innovative system of China. Oliva et al. (2019) provide the characteristics and types and perform a comparative analysis of innovations in the main sectors of Brazilian business. Pan et al. (2019) reflect the interconnection between innovative network, technological training, and effectiveness of innovations of

hi-tech cluster companies.

Soto-Acosta et al. (2018) describe new problems in the eco-systems of business innovations and note an important role of information and communication technologies in managing knowledge and innovations within a company and in a business environment. Sozinova et al (2018) determine the priorities of new information and communication technologies in the modern economy. Jezic von Gesseneck et al. (2018) study the prediction of innovative system and systemic innovations for foreign countries and territories. Hsu et al. (2019) note the openness of implementation of technologies and support for top management and innovations in service sphere as the perspectives of social innovations.

Hong et al. (2018) prove the moderate character of collectivism in the Chinese context of research innovations, exploitation innovations, and creative approach of employees. Popkova et al. (2017) think that innovations are the basis for marketing strategies of Russian oil companies in the conditions of low prices for oil. Popkova and Sergi (2018b) and Sozinova (2019) note that Industry 4.0 and other innovations have a large influence on Russia's development. Andronova et al. (2019) perform a study of sectorial innovative efforts by the example of the Russian economy.

Digital modernization – as a special direction of innovative development of modern entrepreneurship – is studied in the following authors. Shulus et al. (2020) think that intellectual production and consumption constitute a new reality of the 21st century. Ragulina (2019) studies the priorities of development of Industry 4.0 in the modern economic systems with different progress in formation of the knowledge economy.

Belik et al. (2020) point out a vivid influence of the technological revolution in the sphere of digital technologies on the modern entrepreneurship. Popkova et al (2019)

analyze the essence of the process of managing the modern society's adaptation to Industry 4.0 based on information waves and impulses. Popkova (2019) and Fokina et al. (2018) note the preconditions of formation and development of Industry 4.0 in the knowledge economy. Sozinova et al. (2019a) study evaluation of effectiveness of managing the educational markets in countries with the highest global competitiveness in the sphere of education and determine and compare the factors of development of universities in Industry 4.0. Popkova and Sergi (2019) substantiate the contradiction of the digital economy, which consists in opposition of complexity and diversity, on the one hand, and rationality, on the other hand. Popkova and Sergi (2020) study human capital and AI in Industry 4.0 and point out its convergence and differences in Russian social entrepreneurship.

The issues of strategic development of entrepreneurship are also studied in detail. Schreuder and Noorman (2019) note that in the process of strategic management of talents it is necessary to create a strategic value by putting the best talents on the key positions. Pavlatos and Kostakis (2018) show the influence of characteristics of the top management team and historical financial results on accounting in strategic management.

Ferreira et al. (2018) consider theory, practice, and future challenges for strategic management of knowledge. Jami Pour et al. (2018) develop an integrated methodology of strategic planning of knowledge management and offer a road map for strategic leveling. Pasch (2019) presents a systemic vision of the organizational life cycle and strategic managerial accounting.

Nanda et al. (2019) offer an original basis for strategic development of technologies of small companies in countries with emerging economies. Aaltola (2018) studies investments in strategic development and notes the significance of managerial control

of business models and managerial innovations. Madson et al. (2020) study the strategic development of flexible production capacities.

The notion, essence, and structure of entrepreneurship's products' quality are studies in a range of works. Shahin (2019) consider the connection between quality and innovations and offer recommendations for creating a value for customers with the help of innovations with added value. Sciarelli et al. (2020) note the interconnection between the methods of quality management, organizational innovations, and technical innovations in higher education.

Sedevich-Fons (2018) substantiates the connection between the system of strategic managerial accounting and quality management. Sumardi and Fernandes (2020) note the influence of quality management on organization's effectiveness: quality of services and characteristics of product in quality of corporate environment. Bacoup et al. (2018) determine the transition from the system of quality management to an underdeveloped system of quality management.

Uluskan et al. (2018) substantiate the influence of the methods of quality management on readiness to changes, due to new implementations of quality. Popkova (2020) offers a new approach to quality of goods and services in the conditions of the knowledge economy: opposition of traditions and innovations. Kulikova et al. (2020) note the development of clusters in innovative engineering based on the theory of intellectual analysis of data and chaos.

Enes and Silva (2020) determine improvement of quality of services during transportation from storage in a retail store. Bulatović and Stranjančević (2019) think that satisfaction of tourists is the indicator of quality destination management (shown by the example of Montenegro). Feriyanto (2019) points out the influence of quality of human development factors on the rate of economic growth (shown by the example of

a province in Yogyakarta).

Effectiveness – as a criterion of entrepreneurship management – is substantiated and studied in multiple works. Hsieh et al. (2019) point out that the decision on information disclosure management influences the effectiveness of production and revenues management. Bzeouich et al. (2019) think that a board of directors is important for profit management and effectiveness of corporate investments. Wei et al. (2019) write that innovations in management are important for effectiveness; however, a contradiction of effectiveness and legality is noted.

Moraes et al. (2019) justify that knowledge management is important during the interaction between green human resources and eco-effectiveness in the financial services' industry. Popkova et al. (2020) reflect the perspectives of improving marketing of healthcare organizations based on the technologies of public-private partnership for increasing their effectiveness. Sozinova (2018), Sozinova and Laptev (2018), Sozinova et al (2017a), and Sozinova et al (2017 b) show marketing concepts of transformation of entrepreneurial structures that use information technologies.

Bogoviz et al (2018) and Sozinova et al (2019b) offer approaches to managing the economic growth of socio-economic systems.

Inshakova and Bogoviz (2020) offer alternative methods of evaluating economic conflicts in the national positive and soft law for increasing the effectiveness of conflict management of modern entrepreneurship. Alpidovskaya and Popkova (2019) compare the study of Karl Marx to modernity and perform a political and economic analysis of social systems management for increasing the effectiveness of business structures. Popkova (2017) develops recommendations for improving the economic and legal framework of the modern Russian society from the positions of effectiveness of entrepreneurship management.

The performed literature overview shows that the theoretical basis of the research of effectiveness of entrepreneurship management, implementation of innovative projects, and strategic development of entrepreneurship has been formed and allows for scientific study of the problem of this paper. However, gap analysis has shown a range of questions that have no answers in the existing works. These gaps include underdevelopment of the scientific concept of product quality of entrepreneurship and its structure and the absence of a systemic vision of effectiveness of quality management during implementation of innovative projects, as the basis of company's strategic development. These gaps are to be filled in this paper.

3. Materials and methodology

Here we offer hypothesis H_0 – implementation of innovative projects at a company influences the components of its products' quality. The mathematical sense of the offered hypothesis consists in the existence of a large (more than 50%) correlation between the indicators that characterize products' quality and the level of innovative activity in entrepreneurship. A logical scheme that reflects the structure of company's products' quality and the offered hypothesis is shown in Figure 1.

As shown in Figure 1, the following components are distinguished in the structure of company's products' quality. 1st component: satisfaction of consumers' needs. It is determined by technical characteristics of the products and is a core, basis of quality – because entrepreneurship's products have to create benefits for society. All other components are equal.

2nd component: competitiveness of products. This includes products' attractiveness in the target market and its advantages as compared to the existing analogs. Product is competitive if it satisfies consumers' needs better than the alternative product in the

market, which is sold by rivals. Competitiveness of the product is shown by volumes of sales and scale of the market.

3rd component: universal character and consideration of interested parties' opinions. The more consumers like the product and the more needs are satisfied by the product, the

higher quality it has. Here it is necessary to note the absence of negative externalities of production, distribution, and consumption of products. If there are no negative externalities, or if there are even certain positive externalities, the product is of higher quality as compared to its analogs.

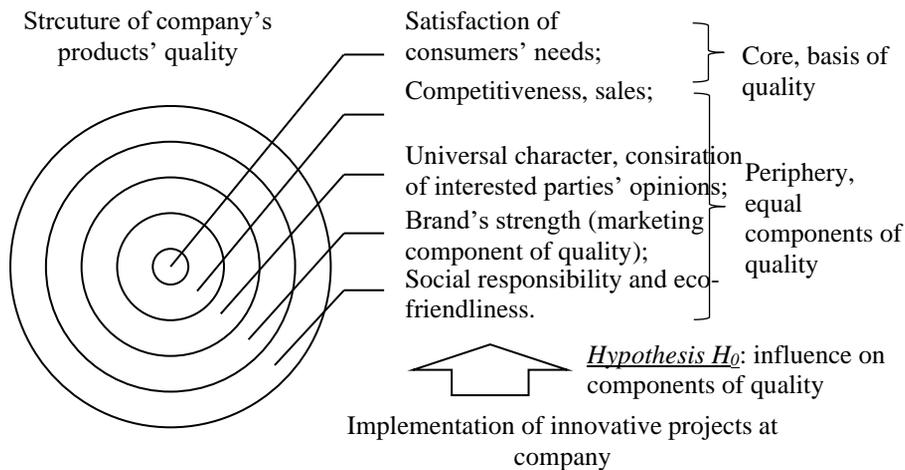


Figure 1. Logical scheme, which reflects the structure of company's products' quality and hypothesis (H_0).

Source: developed and compiled by the authors.

4th component: brand's strength (marketing component of quality). It determines product's attractiveness of the target consumers and their loyalty. The above components of quality are taken into account in The Global Competitiveness Report of the World Economic Forum (2020). 5th component: social responsibility and eco-friendliness. This additional component formed under the influence of social progress. Progressive society strives not only to own profit but also to public profit, as well as to prevention of public damage from realization of private interests.

More and more consumers around the world pay attention to corporate responsibility. It consists of two initiatives. Firstly, corporate

social responsibility, which consists in responsibility before employees for observing labor legislation and creating favorable conditions for realization of human potential. Secondly, corporate ecological responsibility, which is connected to environment protection, implementation of "green" innovations, and corporate contribution to fighting climate change.

There are no direct statistics on corporate responsibility. However, there are analytical materials that are based on the official statistics. Institute of Scientific Communications (2020a, 2020b) calculates its own indices based on data sets – interactive platforms that contain systematized statistical information on the

set topic from different respectable sources. Corporate social responsibility index is provided in Social entrepreneurship ranking based on data set “Social Entrepreneurship in the World Economy: a Path from Virtual Scores to Big Data – 2020”. Corporate fighting climate change index is available in Ranking of sustainable development and fighting climate change based on corporate social and ecological responsibility in countries of the world in 2020 based on data set “Corporate social responsibility, sustainable development, and fighting climate change: imitation modeling and neural network analysis in regions of the world – 2020”.

Countries of three categories by the criterion of position in the Global Innovation Index WIPO (2020) were selected for this research:

- Top 5 innovative economies: leaders in the Global Innovation

Index, with the highest innovative activity of entrepreneurship;

- Middle 5 innovative economies: countries with middle positions in the considered ranking, with moderate innovative activity of entrepreneurship;
- Low 5 innovative economies: countries at the bottom of the ranking, with the lowest activity of implementation of innovative projects in entrepreneurship.

Due to coverage of all three distinguished categories of countries, this research will allow obtaining the fullest and most precise results at the scale of the global economy. Statistics of innovations and product quality of entrepreneurship in countries of the distinguished categories in 2020 are shown in Table 1.

Table 1. Statistics of innovations and entrepreneurship’s products’ quality in countries of the given categories in 2020.

Category	Country	Innovation index, points 0-100	Components of entrepreneurship’s products’ quality, points 1-100					
			Buyer sophistication	Market size	Multi-stakeholder collaboration	Trademark applications	Corporate social responsibility	Corporate fighting climate change
Top 5 innovative economies	Switzerland	67.24	66.9	66.2	72.1	100.0	62.699	19.2486
	Sweden	63.65	57.9	65.4	72.0	99.84	60.923	2.09631
	USA	61.73	68.8	99.5	73.9	85.94	73.238	9.36652
	Netherlands	61.44	62.7	74.3	72.7	81.43	67.478	11.0538
	UK	61.30	62.1	81.8	65.5	94.55	70.496	8.11987
Middle 5 innovative economies	Brazil	33.82	43.1	81.3	44.3	71.23	49.027	6.69018
	Russia	37.62	41.2	84.2	49.5	65.44	61.147	6.24681
	India	36.58	49.8	93.7	53.3	57.54	54.086	4.43789
	China	54.82	58.2	100.0	57.3	79.23	46.685	4.45568
	South Africa	34.04	47.2	68.6	52.6	66.98	46.878	5.55192
Low 5 innovative economies	Saudi Arabia	32.93	57.8	76.3	56.7	67.45	41.195	5.51136
	Peru	32.93	38.3	62.2	36.6	69.38	35.881	5.13704
	Indonesia	29.72	43.2	82.4	59.7	56.24	45.161	6.17522
	Egypt	27.47	39.0	73.6	44.0	54.01	34.634	4.49449
	Rwanda	27.38	36.0	35.1	47.9	33.53	31.886	1.53637

Source: compiled by the authors based on Institute of Scientific Communications (2020a), Institute of Scientific Communications (2020b), WIPO (2020), World Economic Forum (2020).

The quantitative influence of innovative projects, which are implemented in entrepreneurship, on product's quality is determined with the help of correlation analysis. Correlation (interdependence) between the components of quality (separately and in total) and the index of innovations in each category of countries is calculated. Qualitative analysis and development of recommendations are conducted according to the systemic approach, on the basis of general scientific research methods, including induction, deduction, analysis, synthesis, and formalization.

4. Results

4.1 Determination of the quantitative influence of innovative projects, which are implemented in entrepreneurship, on product's quality

For determining the quantitative influence of innovative projects, which are implemented in entrepreneurship, on quality of products, let us use the results of correlation analysis of connection between the components of quality and the index of innovations in top 5 innovative economies (Figure 2), middle 5 innovative economies (Figure 3), and low 5 innovative economies (Figure 4) in 2020.

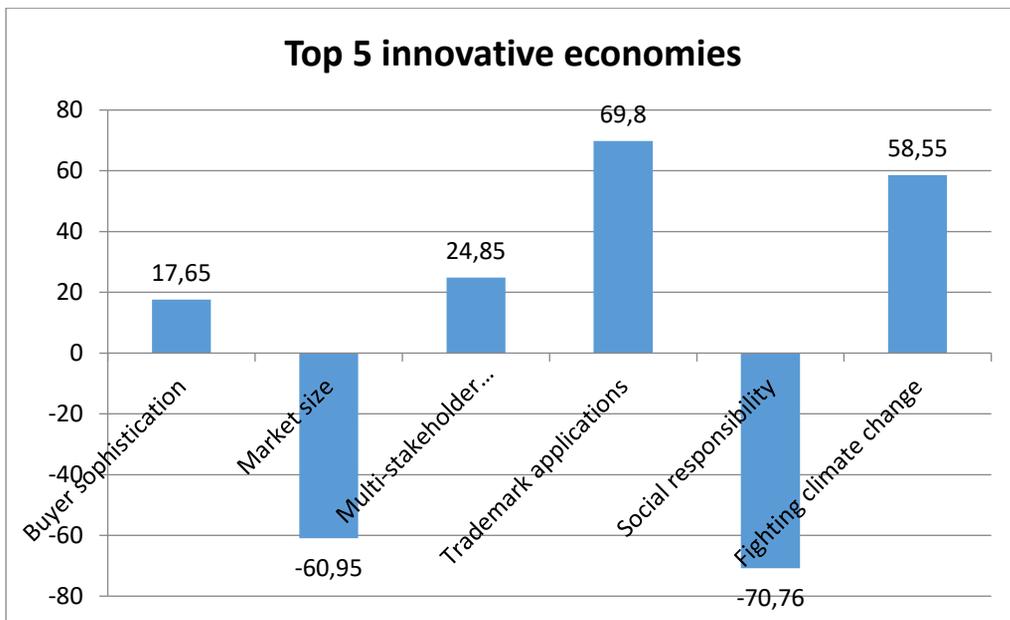


Figure 2. Cross-correlation between the components of quality and innovation index in top 5 innovative economies in 2020, %.

Source: calculated and compiled by the authors.

As shown in Figure 2, implementation of innovative projects in entrepreneurship in top 5 innovative economies in 2020 leads to strengthening of brand (correlation – 69.80%) and increase of fight against climate

change (58.55%) and moderately raises buyer sophistication (17.65%). Market size (-60.95%) and social responsibility (-70.76%) of entrepreneurship reduce substantially.

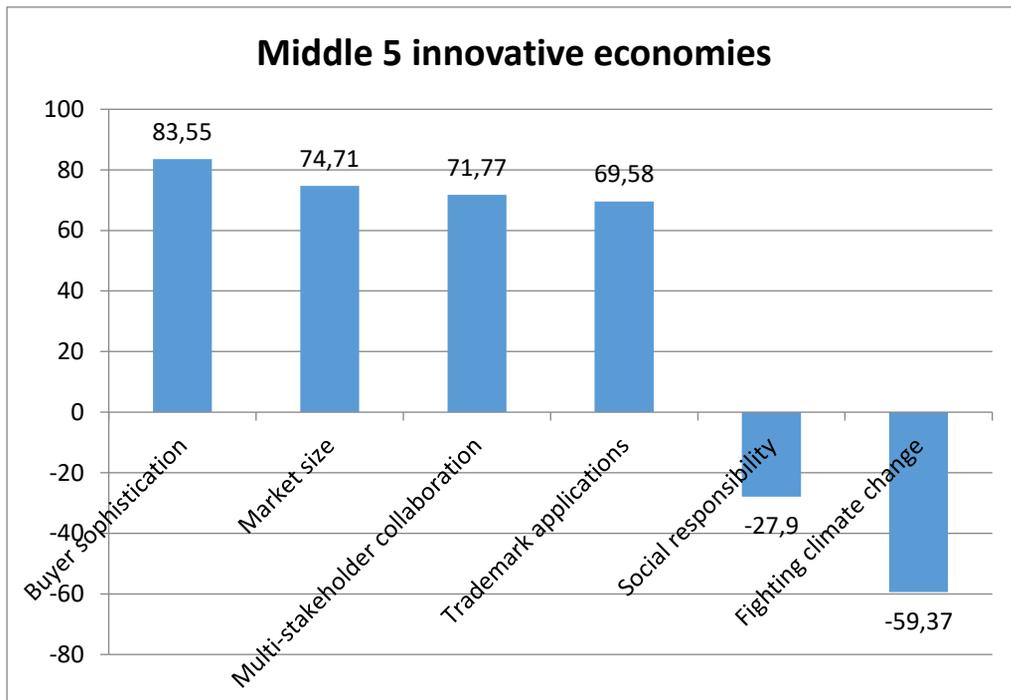


Figure 3. Cross-correlation between the components of quality and innovation index in middle 5 innovative economies in 2020, %.

Source: calculated and compiled by the authors.

As shown in Figure 3, implementation of innovative projects in entrepreneurship in middle 5 innovative economies in 2020 leads to increase of buyer sophistication (83.55%), growth of market size (74.71%), provision of multistakeholder collaboration (71.77%), and trademark application (69.58%). Social responsibility (-27.90%) and fight against climate change (-57.37%) reduce substantially. This could be caused by insufficient progressiveness of society and consumers' neglect of corporate responsibility as a characteristic of quality.

As shown in Figure 4, implementation of innovative projects in entrepreneurship in low 5 innovative economies in 2020 leads to increase of buyer sophistication (60.11%), market size (36.87%), trademark application (86.42%), level of social responsibility (60.85%), and fight against climate change (60.85%). Multistakeholder collation decreases (-1.18%).

The generalized results of correlation analysis, which reflect the connection between quality on the whole (in the unity of all components based on the calculated direct average values), and the innovation index in countries of the given categories in 2020 are shown in Figure 5.

As shown in Figure 5, the quantitative influence of innovative projects, which are implemented in entrepreneurship, on quality of products in top 5 innovative economies is minimal (6.52%). In middle 5 innovative economies it is higher (35.39%), and in low 5 innovative economies it is very high (47.49%). Thus, in countries of all three categories, implementation of innovative projects in entrepreneurship positively influences the quality of products, but these consequences are differentiated and have to be managed.

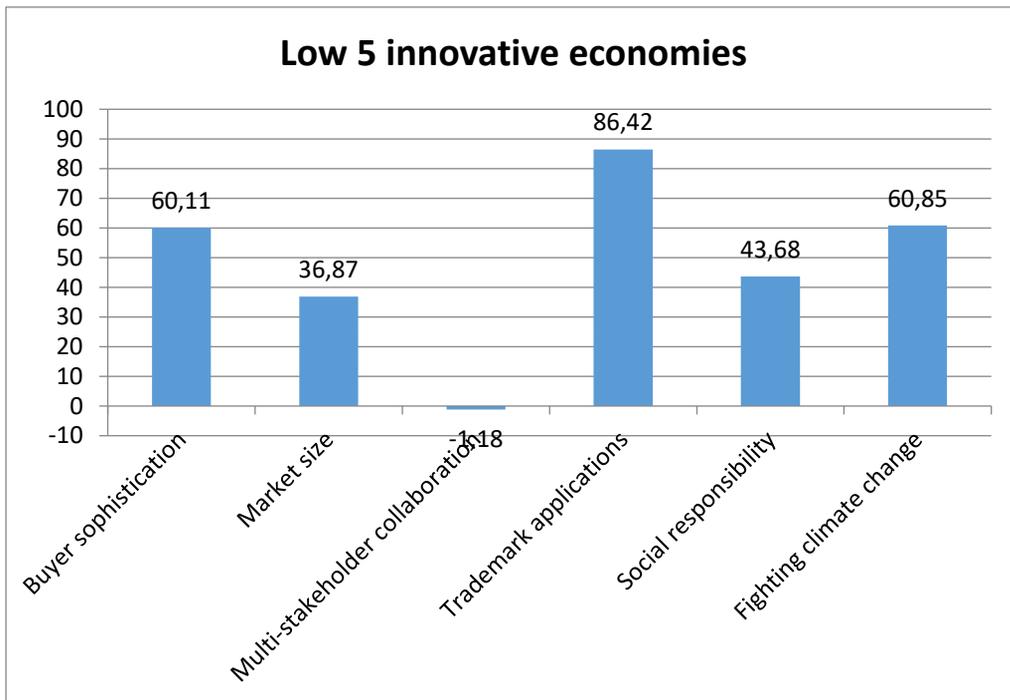


Figure 4. Cross-correlation between the components of quality and innovation index in low 5 innovative economies in 2020, %.

Source: calculated and compiled by the authors.

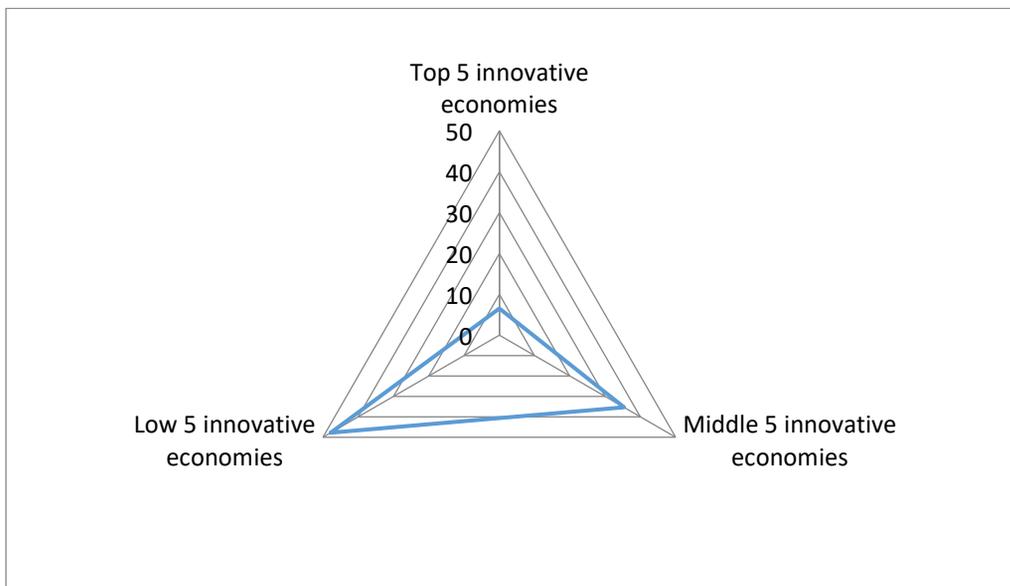


Figure 5. Cross-correlation between quality (in the unity of all components) and innovation index in countries of the set categories in 2020, %.

Source: calculated and compiled by the authors.

4.2 Qualitative analysis of implementation of innovative projects from the positions of effectiveness of managing products’ quality

For qualitative analysis of implementation of innovative projects from the positions of effectiveness of managing products’ quality, let us use their treatment that is shown in view of the components of quality in Table 2.

As shown in Table 2, the treatment of implementation of innovative projects from the positions of quality management’s effectiveness reflects the target result in the sphere of product quality by means of innovations, expenditures for achievement of result for quality, and requirements to effectiveness of quality management. Effectiveness is assessed through result/cost ratio.

Table 2. Treatment of implementation of innovative projects from the positions of effectiveness of products’ quality management.

Component of company’s product’s quality	Treatment of implementation of innovative projects from the positions of quality management effectiveness		
	Target result in the sphere of product’s quality by means of innovations	Expenditures for achievement of result for quality	Requirements to effectiveness of quality management
Buyer sophistication	improvement of products’ technical characteristics	improvement of resource provision	mandatory achievement of result, regardless of expenditures
Market size	uniqueness (unique advantages due to innovations)	registration of rights and intellectual property protection	
Multistakeholder collaboration	Wide applicability, mass character	transaction costs	requirement to high effectiveness of management
Trademark applications	strengthening of product’s brand by means of products’ novelty	marketing support for innovations	
Corporate social responsibility	social advantages of products (humanistic innovations)	implementation of measures in the sphere of social responsibility	if consumers are progressive (demand for corporate responsibility)
Corporate fight against climate change	eco-friendliness of products (“green” innovations)	Implementation of measures in fight against climate change	

Source: calculated and compiled by the authors.

For the first two components of quality, it is necessary to achieve the result, regardless of expenditures. This means that innovations are inexpedient (high risks for quality) or even ill-advised for a company, if they are not oriented as result and do not ensure it. If there is such an opportunity, expenditures should be below result – for ensuring higher effectiveness of quality management. If not, a company has to achieve results with expenditures that exceed the results.

In the aspect of satisfaction of consumers’ needs, the result is improvement of products’ technical characteristics: efficiency, size, color, weight, etc. Expenditures are expressed in improvement of resource

provision of production. Resources could be material, technological, and human resources. In the aspect of increase of market size, the result of quality management during implementation of innovative projects in entrepreneurship is provision of the products’ uniqueness. This envisages creation of unique advantages by means of innovations, which cannot be copied/reproduced by rivals. Expenditures for achievement of result include registration of rights and intellectual property protection.

For the second pair of the components of quality, there is a requirement of high effectiveness of quality management in the aspect of innovative activities. This means

that when implementing innovative projects in entrepreneurship it is necessary to strive for the increase of quality in the aspect of these two components. However, if expenditures exceed result, it is expedient to refuse from increase of quality in the aspect of these components. They are not of top-priority, but should be taken into account. There might be a situation in practice at which high effectiveness of quality management in the aspect of these components is ensured - which justifies the company's innovative activities.

In the aspect of multistakeholder collaboration, the result is wide applicability and mass character of the products. Expenditures are expressed in transaction costs. In the aspect of trademark application, results are strengthening of the products' brand by means of the products' novelty, and expenditures are marketing support for innovations based on advertising, branding, and PR.

For the third pair of the components of quality, quality management during the company's innovative activities is expedient in case of consumers' progressiveness – i.e., demand for corporate responsibility and its high value. Here we speak of consumers' readiness to pay higher price for the products of higher quality in the aspect of corporate social and ecological responsibility.

In the aspect of corporate social responsibility, the result is social advantages of the products, which add humanism to innovations. The expenditures are implementation of measures in the sphere of social responsibility. In the aspect of corporate fight against climate change, the result is eco-friendliness of the products ("green" innovations), and the expenditures are implementation of measures in fight against climate change (financing of corporate ecological responsibility of a company).

Thus, the performed qualitative analysis of innovative projects implementation from the positions of effectiveness of managing

products' quality allows classifying the components of quality by the criterion of their significance and necessity. The most important component of quality is buyer sophistication (the core of quality). Together with market size, it is a mandatory component for quality management, regardless of effectiveness.

Multistakeholder collaboration and trademark application are not mandatory for management and are necessary only in case of achievement of high effectiveness of quality management during implementation of innovative projects в entrepreneurship. Corporate social responsibility and corporate fight against climate change are not mandatory either and should be taken into account only under the condition of their high importance for consumers; depending on its level, there might emerge the requirements of high or moderate effectiveness.

4.3 Policy implications for provision of effectiveness of quality management during implementation of innovative projects for company's strategic development

Based on the results of the performed quantitative and qualitative analysis for provision of effectiveness of quality management during implementation of innovative projects for company's strategic development, the following scientific and practical recommendations (policy implications) are offered.

Firstly, quality has to be the priority during implementation of innovative projects в entrepreneurship. In markets with high competition, companies usually cannot influence the prices of their products. That's why their innovative activities should be oriented at increase of quality, for ousting their rivals from the market or at least for increasing the volume of their sales. This recommendation is especially important for companies in low 5 innovative economies,

where innovations contribute to increase of quality.

Secondly, it is expedient to take into account consequences for quality during implementation of innovative initiatives in entrepreneurship. Even if a company has certain problems in the pricing sphere (e.g., due to pressure from shareholders, caused by the growth of requirements to revenue and profitability of business), faces the problem of price dumping, or, on the contrary, strives for price dumping for ousting its rivals from the market, quality should be considered as a similar priority as compared to reduction of costs. The described situations are peculiar for low concentration markets with the sectorial structure of oligopoly or monopolistic competition.

Modern companies have to reject the idea of reduction of prices by means of product quality, for it contradicts the ideas of company's strategic development and could ensure only short-term profit with long-term losses, up to company's leaving the market. This recommendation is especially important for companies in middle 5 innovative economies, where innovations contribute to increase of entrepreneurship's products' quality.

Thirdly, regardless of the market structure, companies should pay attention to all components of quality. Orientation at increase of quality in the aspect of certain components while neglecting other components is not allowable. Though the core of quality is most significant, other components of quality are equal and should be taken into account equally. This recommendation is especially important for companies in top 5 innovative economies, where quality is an acknowledged priority of entrepreneurship's innovative activity, but, as a result of implementation of innovative projects, the contradictory results in the sphere of quality are achieved, at which certain components of quality are improved, and other remain unchanged or even worsen. The developed scientific and practical

recommendations (policy implications) form a risk-oriented approach to implementation of innovative projects in entrepreneurship and create a systemic idea of quality management for company's strategic development and guarantee the effectiveness of this management. They allow taking into account the specifics of the market structure and innovative specifics of the economy (its category) for achieving the highest effectiveness of quality management during implementation of innovative projects in entrepreneurship.

5. Conclusion

Thus, the offered hypothesis has been confirmed. It has been proved that implementation of innovative projects in entrepreneurship influences quality of products. It has also been determined that consequences of entrepreneurship's innovative activities for quality of the products are very differentiated in view of the components of quality and in countries of different categories by innovative activity.

The consequences of entrepreneurial innovations are different for different components of product quality and have different character. The consequences for trademark application (correlation between innovations and quality – 75.27% on average) and buyer sophistication (53.77%) are positive and most vivid in countries of all categories. The consequences for multistakeholder collaboration (31.81%), its competitiveness (16.88%), and fight against climate change (20.01%) are contradictory (positive in some countries and negative in other countries). The consequences for social responsibility (-18.33) are mainly negative for almost all countries.

In top 5 innovative economies, advantages for quality are minimal (6.52%) and very between the components of quality. In middle 5 innovative economies, the consequences for the main components of quality are positive and vivid, and additional

components of quality in these counties have limited significance and low value for consumers – average correlation between quality and innovations is 35.39%. In low 5 innovative economies, advantages for quality are most vivid (47.49%) and homogeneous (consequences of innovations are non-contradictory and positive).

The contribution of the performed research to development of theoretical science consists in specification of the essence and structure of product's quality in entrepreneurship. The components of quality are substantiated, and the treatment of implementation of innovative projects from the positions of effectiveness of managing products' quality is provided. The authors' treatment is used for systematizing the components of quality from the positions of the target result in the sphere of product's quality by means of innovations and expenditures for achievement of results for quality, and for classifying them by the criterion of significance and requirements to effectiveness of quality management, which is evaluated through result/costs ratio.

The practical significance of this study consists in the fact that the developed scientific and practical recommendations (policy implications) could be used for ensuring effectiveness of quality management during implementation of innovative projects for company's strategic development. An additional advantage of the developed recommendations is consideration of the specifics of each category's countries, as well as the specifics of various market structures.

The risk-oriented approach has the following scientific and practical advantages. Firstly, it allows for identification and management (reduction) of risks for product quality, which appear during implementation of innovative projects in entrepreneurship.

Secondly, the formed systemic idea of entrepreneurship's products' quality allows taking into account all its components during manifestation of innovative activity and ranking them by the level of significance.

Thirdly, the new approach to managing the business innovations allows focusing not on the current priorities but on the strategic development of a company, due to which innovations acquire a new role and become a tool of strengthening a company's positions in the market. Fourthly, the offered approach aims quality management – during implementation of innovative projects in entrepreneurship – at effectiveness, offers recommendations for its achievement, and determines the requirements to effectiveness depending on the importance of the components of quality.

Summing up the above, it should be noted that the performed research showed a new aspect of implementation of innovative projects, connected to quality management on the terms of effectiveness and contribution to company's strategic development. The risk-oriented approach to innovative activities in entrepreneurship guarantees advantages from innovations in the short-term and long-term and allows keeping the company's market positions due to innovations that are oriented at quality.

Thus, a certain limitation of this work's results is its universal character – use of the experience of a lot of countries. On the one hand, this allows obtaining general and correct conclusions, but, on the other hand, this predetermines the framework character of the offered recommendations. That's why the perspectives of future scientific research include case studies and development of detailed applied recommendations and “road maps”, which would take into account the experience of specific countries.

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