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"PAY FOR QUALITY" (P4Q) AS A NEW FORM OF PAYMENT FOR WORK: ADVANTAGES FOR DEVELOPING COUNTRIES AND THE SCIENTIFIC-METHODOLOGICAL APPROACH

Abstract: *The article seeks the goal of substantiating the advantages for developing countries and developing a scientific and methodological approach "Pay for Quality" (P4Q) as a new form of stimulation and payment for work. Originality and novelty of this research consists, firstly, in determining and substantiating the advantages and the logic of selecting the approach to motivation and stimulation of work in entrepreneurship, as well as the preconditions to using the P4Q approach. Secondly, in developing the scientific and methodological recommendations for measuring quality and the scale of advantages of its increase for a company, which will allow implementing the P4Q approach by a large range of companies. Thirdly, in studying the experience of developing countries as socio-economic systems with the specific conditions of application of the P4Q approach. This is a new form of payment for work, which is very interesting for developing countries, as it allows creating well-paid jobs and using unique, intellectual, and skilled human resources in entrepreneurship. This will allow implementing human potential and giving a powerful impulse to development of hi-tech private entrepreneurship, which is oriented at innovations and quality, as well as forming sustainable global competitive advantages based on high quality of products. Due to application of the P4Q approach to stimulation of work in developing countries, the rate of economic growth and market capitalization of business increase. For this, a perspective scientific and methodological approach to stimulation of work - "P4Q"- is offered, perspectives are outlined, and applied recommendations for its implementation in developing countries are given.*

Keywords: *Quality; Pay for Quality (P4Q); Form of Payment for Work; Stimulation of Quality of Work; Developing Countries.*

1. Introduction

In the practice of entrepreneurship, and important role belongs to motivation and stimulation of work. For entrepreneurs, it ensures competition between employees and

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increase of their activity in the direction that is of top-priority for business. Motivation and stimulation of work allows employees to become distinguished as compared to other employees, showing their unique capabilities, and realizing their labor potential, thus seeking higher income and career building.

The most popular approach that has been actively used in entrepreneurship in recent decades is "pay for productivity". In this case, a company adopts standards of quality, and employees' wages depend on the number of manufactured similar products. In the innovative economy, a transition from consumer society, which landmark is increase of the volume of consumption of goods and services, to knowledge society and digital society, in which consumers try to purchase unique products, which are created in a the knowledge-intensive and hi-tech products, and in which products' value is determines by its quality, takes place.

In the most progressive economies, in which developed countries (OECD) dominate, the influence of digitalization and social development led to formation of a new approach, which envisages stimulation of quality ("Pay for Quality", P4Q). This is a new form of payment for work, in which worker is motivated for increase of the manufactured products' quality. The advantages of the new approach include company's achieving sustainable and unique competitive advantages due to continuous development and modernization and supporting high loyalty of consumers due to the fullest satisfaction of their needs.

However, despite these advantages, which are very interesting for modern entrepreneurship, the new approach (P4Q) is applied in a limited circle of large corporations, which pay a lot of attention to motivation and stimulation of work, having whole departments of management and large budgets. P4Q is not yet accessible for a wide circle of companies due to insufficient scientific elaboration and the absence of universal methodological and applied recommendations for its use. This problem is predetermined by the following research gaps.

1st gap: uncertainty of criteria of quality, which determine payment for work during the "P4Q" approach to motivation and stimulation of work. The traditional idea of quality of products as absence of defect is oriented at stability and standards of quality. On the one hand, increase of quality in the P4Q approach envisages creation of additional advantages for consumers, on top of the existing standards. On the other hand, quality could be increased by means of implementing innovations (including, creation of know how) if an employee shows creative activity. In both cases, measuring of quality is complicates and requires a special methodology.

2nd gap: complexity of evaluating the scale of advantages for quality in the P4Q approach. In case of fixed quality in the approach that stimulates productivity, a company clearly sees the cost of each product item and could easily evaluate the profit depending on the production volume and determine the preferable bonus for an employee for high productivity. In the P4Q approach, advantages for quality depending on innovations could be various, and it is not easy to evaluate them from the positions of effectiveness. Certain innovations could lead to additional expenditures, but the products might not be of high demand – which will lead to losses. That's why practice-oriented methodological recommendations are required for evaluating the scale of advantages during growth of quality in the P4Q approach.

3rd gap: obscureness of the logic of selecting the approach to motivation and stimulation of work by a company. The above two gaps show high complexity of application of the P4Q approach. Thus, this approach might – even with scientific and methodological recommendations – be inaccessible and/or unprofitable for a wide circle of modern

companies. Workforce productivity is much simpler to measure than quality. That's why the approach aimed at pay for productivity is preferable at least for companies that are not interested in increase of their products' quality or do not have sufficient managerial resources for measuring each employee's products. Therefore, it is necessary to compare the accessible approaches and to substantiate their preference for different companies.

The fourth approach: insufficient elaboration of experience and perspectives of implementing the P4Q approach in developing countries. The innovative economy in developing countries develops slowly (as compared to developed countries). That's why quality of products could have potentially lower value for competitiveness of entrepreneurship. In addition to this, a lower level of digitalization of economy (as compared to developed countries) might reduce companies' capabilities in developing countries in quality control of products that are manufactured by workers. Thus, the specific barriers and opportunities of implementing the P4Q approach in developing countries have to be studied separately from the experience of developed countries.

This paper is to fill these gaps and to substantiate the advantages for developing countries and to develop a scientific and methodological approach "Pay for Quality" (P4Q) as a new form of stimulation and payment for work. Originality and novelty of this research consists, firstly, in determining and substantiating the advantages and the logic of selecting the approach to motivation and stimulation of work in entrepreneurship, as well as the preconditions to using the P4Q approach. Secondly, in developing the scientific and methodological recommendations for measuring quality and the scale of advantages of its increase for a company, which will allow implementing the P4Q approach by a large range of companies. Thirdly, in studying the experience of developing countries as socio-economic systems with the specific conditions of application of the P4Q approach.

The work consists of five consecutive parts. Introduction is followed by literature review and materials and methodology. Results include the following parts: 1) "Pay for Quality" (P4Q) as a new form of payment for work as compared to the alternative approaches to motivation and stimulation of work; 2) study of the modern experience and classification of developing countries by the applied approaches to motivation and stimulation of work; 3) analysis of advantages of applying the P4Q approach and the perspectives of optimization of labor stimulation in developing countries; 4) development of the scientific and methodological approach "P4Q" to stimulation of work and overview of the perspectives of its implementation in developing countries. Conclusion is at the end of the paper.

2. Literature Review

Theoretical and applied issues of motivation and stimulation of work in entrepreneurship are studied in the work Savoia et al. (2016). Vuorensyrjä (2018) describe the successful experience of reforming a police department, which led to increase of workforce productivity and evaluation of police work by citizens. Bratton and Watson, S. (2018) determine the connection between talent management, emotional work, and the role of line managers in the Scottish hospitality industry.

Gurmu and Aibinu (2018) perform an overview of managerial practices of increase of workforce productivity in the projects of multi-story buildings construction. Rogovsky and Sims (2003) think that work is a drive of company's success. Ismail (2015) notes large influence of foreign

workers on workforce productivity (performing analysis of data at the level of certain companies). Notteboom (2018) points out the influence of the changing requirements of market on the systems of employment in docks of North-Western Europe's sea ports. Shen et al. (2003) develop a model of evaluation of government organizations' effectiveness in conflict management based on a study of HR management departments.

The fundamental provisions of the "Pay for Quality" (P4Q) concept and the experience of its practical implementation in developed countries are presented in the following works. Cavalieri et al. (2017) study the initiatives of stimulating quality increase for medical services and analyze the consequences for policy and requirements to management. Enos and Gyapong (2017) note interconnection between the diversity of board of directors, quality of corporate management, and too large wages of a CEO (based on the data from South Africa).

Hemapriya and Uthayakumar (2020) suggest using a two-stage chain of supplies with an allowable delay of payments with exponential time of execution of order, which includes investments for increase of quality and decrease of time required for execution of orders. Zulkifli and Abdul-Aziz (2018) note the decisive factors of payment for work in Malaysia's production sector. Baydoun and Anwar (2018) distinguish niches of quality of services for Sukuk (performing a study of national obligations in the UAE). Morley et al. (2015) think that talent management is the main issue on the path to increase of products' quality in modern entrepreneurship.

The preconditions to implementing a new approach to stimulation of work in the conditions of the digital economy are reflected in the works Bogoviz et al. (2020), Sergi et al. (2019a) and Sergi et al. (2019b).

The performed literature review has shown that the problem of motivation and stimulation of work in entrepreneurship has been sufficiently studied at the fundamental, methodological, and empirical levels of economics. However, the existing approaches to stimulation of work are not systematized, which is a gap in the existing scientific knowledge. Another gap is the deficit of practice-oriented scientific and methodological developments in the sphere of application of a new approach to stimulation of work that envisages "Pay for Quality" (P4Q). Other gaps include also poor elaboration of the experience of stimulation of work in developing countries and obscureness of the perspectives of implementing the P4Q approach. This research is to fill these gaps.

3. Materials and methodology

For obtaining the most useful results, the research objects in this paper are developing countries with different stimulation of workforce productivity in entrepreneurship. This will allow determining the general necessity for stimulation of work and the preferable approach to stimulation of work. For this, the data of the "pay and productivity" indicator are used, from The Global Competitiveness Report for 2019, prepared by the World Economic Forum (2020). The data on the selected countries are shown in Figure 1.

As shown in Figure 1, developing countries with strong (e.g., Malaysia) and weak (e.g., Turkey) stimulation of work in in entrepreneurship are distinguished. The following P4Q indicators are used:

- Mean consumption or income per capita (RV), calculated by the World Bank (2020b);
- Happiness index (HI), from the Data Set "Big Data of the Modern Global Economy: Digital Platform for Data Mining – 2020" of the Institute of Scientific Communications (2020);
- Business agility (BA), from the materials of World Digital

Competitiveness Report 2019, prepared by IMD (2020);

- Innovation index (II), from the Data Set "Big Data of the Modern Global Economy: Digital Platform for Data Mining – 2020" Institute of Scientific Communications (2020);

Hi-technology exports, according to World Bank (2020a).

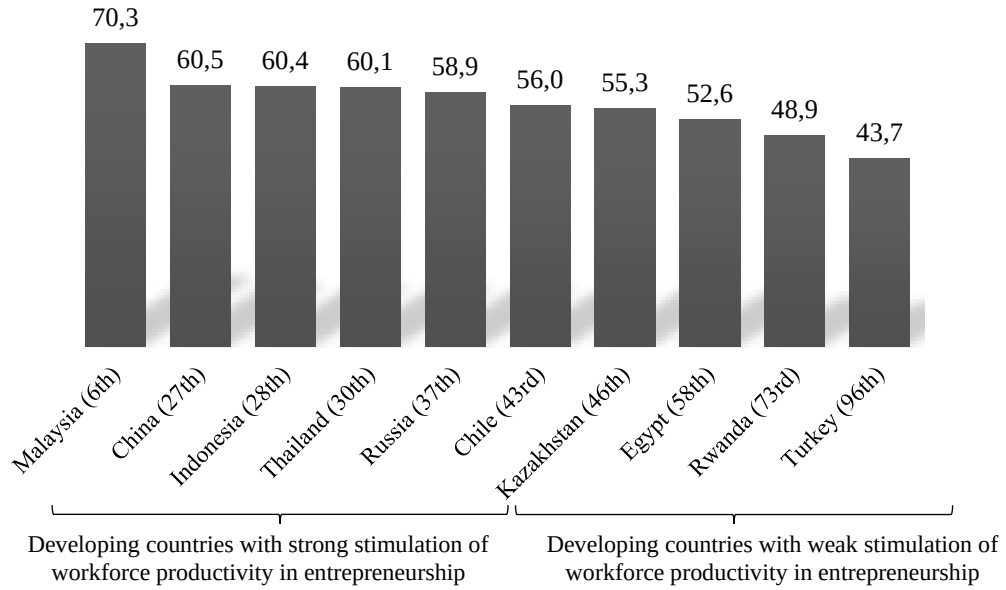

Figure 1. Stimulation of workforce productivity (pay and productivity) in entrepreneurship in developing countries in 2020, points 1-100.
Source: compiled by the authors based on World Economic Forum (2020).

Correlation analysis is used for determining the dependence of income (mean consumption or income per capita) on quality: happiness index (satisfaction of consumers' needs), business agility (activity of digitalization), innovation index (innovative activity of companies' employees), and share of hi-tech products in the structure of industrial export (opportunities for export and global competitiveness of products). The research is performed separately for each distinguished category of developing countries.

The consequences of P4Q are determined with the help of calculation of the P4Q index according to the following formula:

$$\text{Index P4Q}=[(HI_{con}/HI_{mid}+BA_{con}/BA_{mid}+II_{con}/II_{mid}+HE_{con}/HE_{mid})/4]/ /[RV_{con}/RV_{mid}], \quad (1)$$

Where: Index P4Q – systemic indicator of activity of stimulating quality of work, measured in shares of 1 (could exceed 1), the higher the better;

con – average value of the indicator in the country;

mid – medium value among all countries of the selection.

Regression analysis is used for determining – in the whole selection of developing countries – regression dependence on the P4Q index of the following indicators that reflect the expected advantages from stimulation of growth of quality of work:

- Gini coefficient (inequality of incomes), calculated by UNDP (2020) and reflected in Sustainable Development Report 2019 (Indicator Profiles), should decrease (the lower the better);
- Quality of life index, accessible in the Data Set "Big Data of the Modern Global Economy: Digital Platform for Data Mining – 2020" Institute of Scientific Communications (2020);
- Market capitalization of business, from The Global Competitiveness Report for 2019, by World Economic Forum (2020);
- Rate of economic growth, from the Data Set "Big Data of the Modern Global Economy: Digital Platform for Data Mining – 2020" of the Institute of Scientific Communications (2020).

The data are presented in Table 1.

Table 1. Statistics of P4Q in developing countries in 2020.

Category*	Country	Indicators of P4Q					Consequences of P4Q			
		Mean consumption or income per capita, total population (2011 PPP $ per day)	Happiness index, points 1-10	Business agility, positions 1-63	Innovation index, points 1-100	High-technology exports (% of manufactured exports)	Gini coefficient adjusted for top income (1–100)	Quality of life index, points 1-200	Market capitalization, % GDP	Rate of economic growth, %
strong	Malaysia	27.9	5.339	17	42.68	53.0	47.9	120.39	131.7	4.9
	China	11.6	5.191	1	54.82	31.0	41.9	99.87	70.2	6.0
	Indonesia	6.5	5.192	21	29.72	8.0	50.7	101.90	46.0	5.4
	Thailand	15.4	6.008	30	38.63	23.0	42.1	104.54	104.2	3.2
	Russia	22.2	5.648	54	37.62	11.0	43.8	104.05	38.9	1.5
weak	Chile	25.2	6.444	50	36.64	7.0	53.3	123.80	89.8	2.7
	Kazakhstan	11.2	5.809	15	31.03	28.0	41.0	85.88	25.4	2.8
	Egypt	5.2	4.166	-	27.47	2.0	49.7	85.42	15.5	5.3
	Rwanda	2.6	3.334	-	27.38	13.0	53.3	-	21.0	7.3
	Turkey	19.4	5.373	44	36.95	2.0	48.4	126.46	22.9	3.4

* Category of developing countries by stimulation of workforce productivity in entrepreneurship.
Source: compiled by the authors based on IMD (2020), Institute of Scientific Communications (2020), UNDP (2020), World Bank (2020a), World Bank (2020b), World Economic Forum (2020).

4. Results

4.1 "Pay for Quality" (P4Q) as a new form of payment for work as compared to alternative approaches to motivation and stimulation of work

For determining the specifics of "Pay for Quality" (P4Q) as a new form of payment for work, let us perform its comparative analysis with the alternative approaches to motivation and stimulation of work (Table 2).

As shown in Table 2, there are three approaches to motivation and stimulation of work in entrepreneurship. 1st approach: fixed salary (absence of stimulation of work). The basis for determining the volume of payment for work is employee's post – for each post has its own wages. The consequences of application of the approach to motivation and stimulation of work for an employee include confidence in stable salary but absence of opportunities for increase of payment for work.

Table 2. Comparative analysis of the approaches to motivation and stimulation of work in entrepreneurship.

Criterion of comparison		Approach to motivation and stimulation of work in entrepreneurship		
		Fixed payment for work	Stimulation of productivity ("Pay for productivity")	Stimulation of quality ("Pay for Quality", P4Q)
Basis for determining the volume of payment for work		post – each post has its own salary	productivity – the more products are manufactured, the higher the payment for work	quality – the higher the products' quality, the higher the payment for work
Consequences of application of the approach to motivation and stimulation of work for employee		confidence in stable salary but absence of opportunities for increase of payment for labor	high competition, but opportunity for implementing the potential of high productivity demonstration	high competition, but opportunity for implementing creative potential and demonstrating high qualification
Consequences for company	in the aspect of productivity	stable productivity	increase of productivity	standard or reduced productivity
	in the aspect of quality	standard quality	standard quality	growth of quality, implementation of innovations
Type of human resources and jobs that is formed based on the approach		similar, interchangeable	highly-paid, unique	
			highly-efficient	intellectual, skilled
Companies for which the approach to motivation and stimulation of work is preferable		state-owned companies	private entrepreneurship	
			conveyor, oriented at "scale effect", based on pricing competitive advantages	hi-tech, oriented at innovations and quality, based on non-pricing competitive advantages

Source: developed and compiled by the authors.

A consequence for a company in the aspect of productivity is stable productivity, and in the aspect of quality– standard quality. Based on this approach, similar and interchangeable human resources and jobs are formed. This approach to motivation and stimulation of work is preferable for state-owned companies.

2nd approach: stimulation of productivity ("Pay for productivity"). In this approach, the basis for determining the volume of

payment for work is productivity – the more products are manufactured, the higher the payment for work. The consequences of application of this approach to motivation and stimulation of work is high competition, but also the possibility to develop the potential of high productivity demonstration.

The consequences for the company include increase of productivity with standard quality. Based on this approach, unique, highly-efficiency, and well-paid human resources and jobs are formed. This approach to motivation and stimulation of work is preferable for private entrepreneurship – conveyor companies that are oriented at "scale effect", based on pricing competitive advantages.

3rd approach: stimulation of quality ("Pay for Quality", P4Q). The basis for determining the volume of payment for work in this approach is quality – the higher the quality of products, the higher the payment for work. The consequences of applying this approach to motivation and stimulation of work for an employee include high competition, but also the possibility to implement the potential and show high qualification.

The consequences for company: standard or reduced productivity with growth of quality and implementation of innovations. Based on this approach, well-paid, unique, intellectual, and skilled human resources and jobs are formed. This approach to motivation and stimulation of work is preferable for hi-tech private entrepreneurship, which is oriented at innovations and quality, based on non-pricing competitive advantages (innovations, digitalization).

4.2 The modern experience and classification of developing countries by the applied approaches to motivation and stimulation of work

In order to study the modern experience of motivation and stimulation of work in developing countries, let us use cross correlation between indicators of quality and means income per capita in the countries of the selection in 2020, calculated based on the data from Table 1 (Figure 2).

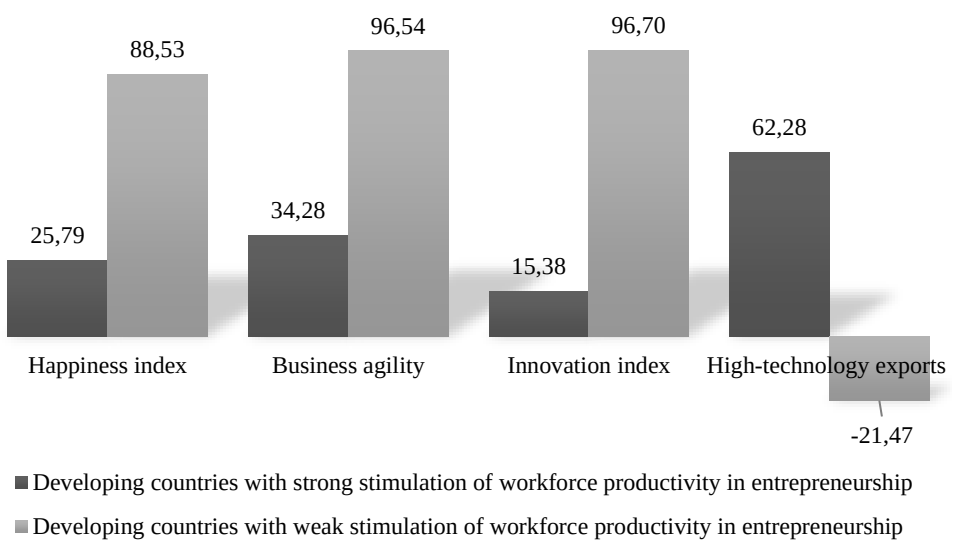

Figure 2. Correlation between indicators of quality and mean income per capita in developing countries in 2020, %.
Source: calculated and compiled by the authors.

As shown in Figure 2, in developing countries with strong stimulation of workforce productivity in entrepreneurship, correlation between mean consumption or income per capita (RV) and happiness index (HI) is moderate – 25.79%. Correlation between payment for work and business agility (BA) is also moderate (34.28%), which is peculiar also for innovation index (II), the correlation with which equals 15.38%. Correlation with high technology exports is high – 62.28%.

In developing countries with weak stimulation of workforce productivity in entrepreneurship, correlation between mean consumption or income per capita and happiness index is high – 88.53%. Correlation between payment for work and business agility is very high (96.54%), which is peculiar also for innovation index, the correlation with which equals 96.70%. Correlation with high technology exports is negative – 21.47%.

Based on Figure 2, averaged correlation is calculated (Figure 3).

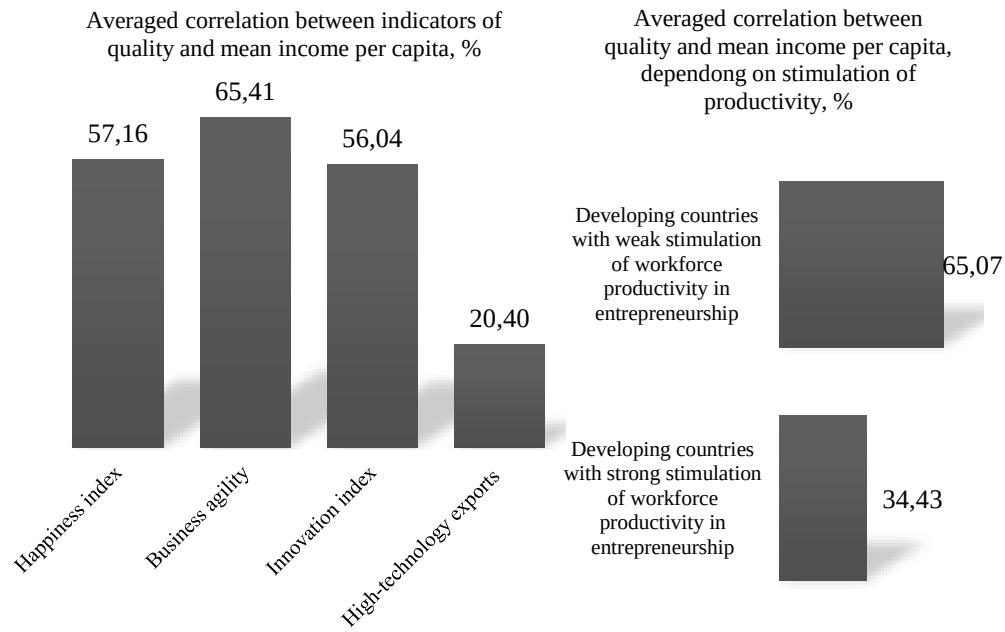

Figure 3. Averaged correlation between payment for work and quality in developing countries in 2020.
Source: calculated and compiled by the author

As shown in Figure 3, in developing countries on the whole correlation between mean consumption or income per capita and happiness index is moderate – 57.16%. Correlation between payment for work and business agility is high (65.41%); and correlation with innovation index is 56.04%. Correlation with high technology exports in small – 20.40%. Averaged correlation between quality in the unity of all its manifestations with payment for work in developing countries with weak stimulation of workforce productivity is higher (65.07%) than in countries with strong stimulation of workforce productivity (34.43%).

For determining developing countries with a high level of stimulation of quality of work in entrepreneurship, let us calculate – based on the data from Table 1 - the P4Q index in 2020 (Table 3).

According to the data from Table 3, the highest value of the P4Q index among the countries of the selection is observed in Rwanda (4.00). The practice of stimulation of quality of work in entrepreneurship (P4Q index>1) is popular in China (1.36), Indonesia (1.69), Thailand (1.08), Kazakhstan (1.33), and Egypt (1.57).

In order to classify developing countries by the applied approaches to stimulation of work in 2020, a special scale has been developed for determining the approaches to motivation and stimulation of work in developing countries of the selection (Figure 4).

Table 3. Calculation of the P4Q index in developing countries in 2020.

Country	Average consumption/ Income per capita (RV_{con}/RV_{mid})	Happiness index (HI_{con}/HI_{mid})	Business agility (BA_{con}/BA_{mid})	Innovation index (II_{con}/II_{mid})	High technology exports (HE_{con}/HE_{mid})	∑/4*	P4Q index
Malaysia	1.90	1.02	0.59	1.18	2.98	1.44	0.76
China	0.79	0.99	0.03	1.51	1.74	1.07	1.36
Indonesia	0.44	0.99	0.72	0.82	0.45	0.75	1.69
Thailand	1.05	1.14	1.03	1.06	1.29	1.13	1.08
Russia	1.51	1.08	1.86	1.04	0.62	1.15	0.76
Chile	1.71	1.23	1.72	1.01	0.39	1.09	0.64
Kazakhstan	0.76	1.11	0.52	0.85	1.57	1.01	1.33
Egypt	0.35	0.79	-	0.76	0.11	0.55	1.57
Rwanda	0.18	0.63	-	0.75	0.73	0.71	4.00
Turkey	1.32	1.02	1.52	1.02	0.11	0.92	0.70
Direct average	RV_{mid}	HI_{mid}	BA_{mid}	II_{mid}	HE_{mid}	-	-

* $(HI_{con}/HI_{mid}+BA_{con}/BA_{mid}+II_{con}/II_{mid}+HE_{con}/HE_{mid})/4$

Source: calculated and compiled by the authors.

The scale that is presented in Figure 4 envisages classification of developing countries in 2020 by two criteria. Firstly, by the criterion of stimulation of productivity, according to which the value of the indicator "Pay for productivity" in Figure 1 should exceed 56. Secondly, by the criterion of stimulation of quality ("Pay for Quality"), according to which P4Q index in Table 3 should exceed 1.

As a result, four types of developing countries are determined:

- countries with systemic stimulation of work, in which P&P>56 and, at the same time, index P4Q>1 – e.g., China, Indonesia, and Thailand;
- countries with stimulation of quality of work, in which P&P≤56 and, at the same time, index P4Q>1 – e.g., Rwanda, Kazakhstan, and Egypt;
- countries with stimulation of workforce productivity, in which P&P>56 and, at the same time, index P4Q≤1 – e.g., Malaysia, Russia;

countries with fixed payment for work, in which P&P≤56 and, at the same time, index P4Q≤1 – e.g., Chile, Turkey.

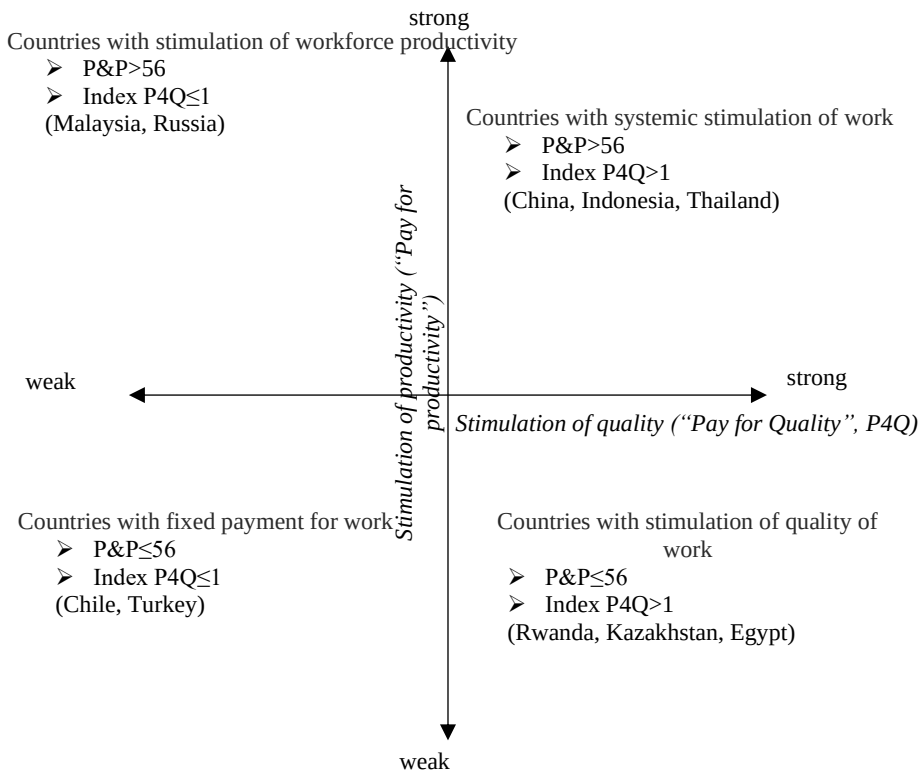

Figure 4. Scale for classification of developing countries by the applied approaches to stimulation of work in 2020.
Source: developed and compiled by the authors

4.3 Advantages of application of the P4Q approach and the perspectives of optimizing stimulation of work in developing countries

For determining the advantages of applying the P4Q approach and the perspectives of optimizing stimulation of work in developing countries, let us use the results of correlation analysis, performed based on the data from Table 1, Figure 1, and Table 3 (Figures 5 and 6). For maximum statistical significance and completeness of results, calculations are performed based on the full selection of developing countries.

As shown in regression curves (Figure 5), increase of P4Q index in developing countries in 2020 by 0.1 leads to growth of Gini coefficient (income inequality) by 1.778% (correlation – 14.10%), decrease of quality of life index by 35.538 points (correlation – 94.14%), decrease of market capitalization of business by 17.411% of GDP (correlation – 18.32%), and increase of economic growth rate by 1.3427% (correlation – 54.98%).

Therefore, the P4Q approach to stimulation of work in developing countries in 2020 does not allow reducing income inequality, due to weak influence on it. The P4Q approach does not ensure growth of quality of life either, despite the vivid connection, and does not stimulate the growth of market capitalization, due to weak influence. The most important advantage of the P4Q approach to stimulation of work in developing countries in 2020 is connected to increase of economic growth rate.

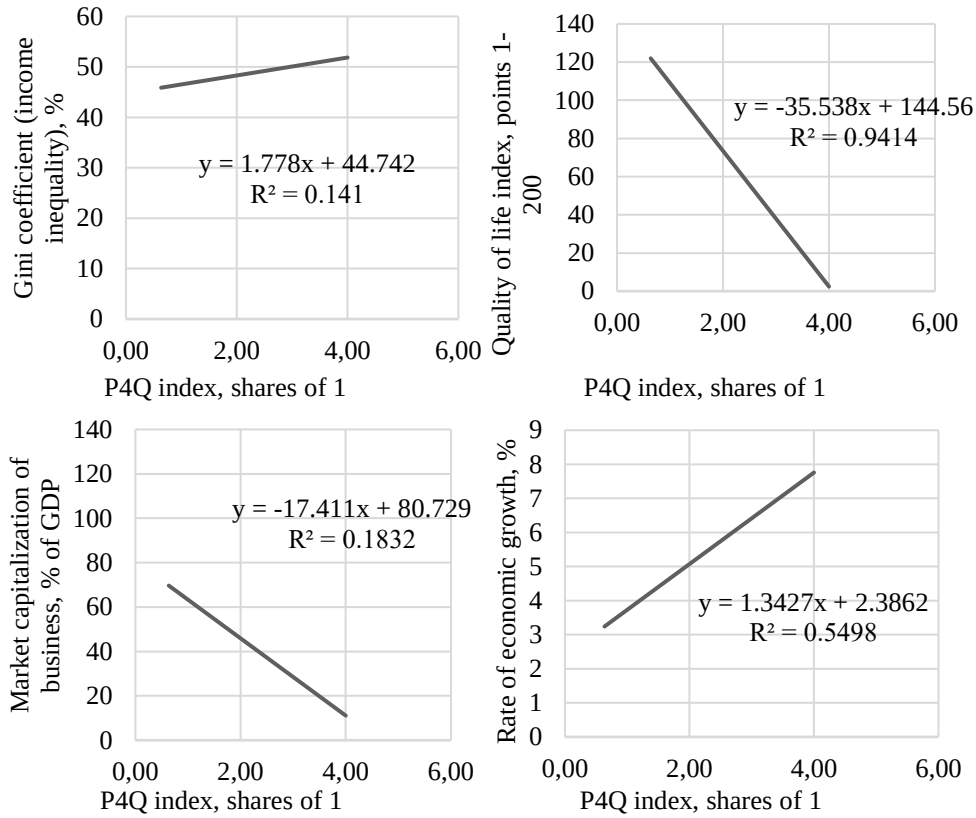

Figure 5. Regression curves of dependence of the potential advantages of stimulation of work on P4Q index in developing countries in 2020.
Source: calculated and compiled by the authors.

According to the regression curves (Figure 5), increase of the indicator of stimulation of workforce productivity ("Pay and Productivity") in developing countries in 2020 by 1 point leads to decrease of Gini coefficient (income inequality) by 0.1912% (correlation – 8.79%), growth of quality of life index by 1.6834 points (correlation – 11.39%), growth of market capitalization of business by 4.3074% of GDP (correlation – 60.49%), and decrease of rate of economic growth by 0.008% (correlation – 0.01%).
Therefore, stimulation of workforce productivity in developing countries in 2020 does not allow reducing income inequality (due to weak influence), does not ensure growth of quality of life (also due to weak influence), and does not stimulate acceleration of economic growth rate due to almost zero connection with it. Stimulation of workforce productivity in developing countries in 2020 ensures a sustainable advantage of stimulating the growth of market capitalization of business.

Based on the results of regression analysis, it is possible to conclude that each approach to motivation and stimulation of work in entrepreneurship ensures certain advantages for the socio-economic system. Neither approach ensures the growth of quality of population's life, and, therefore, it is not determined by work productivity or quality of sold products. Motivation and stimulation of work do not increase income inequality in

society, though they do not lead to its decrease either.

That's why perspectives of optimization of work stimulation in developing countries are connected to increase of market capitalization of business with simultaneous acceleration of economic growth rate. As institutionalization of a new practice of stimulation of work (P4Q) and a new ratio of the practices of stimulation of work (by the criterion of productivity and the criterion of quality) is possible only in the mid-term, optimization is oriented at the period until 2025. The results of optimization are presented in Table 4.

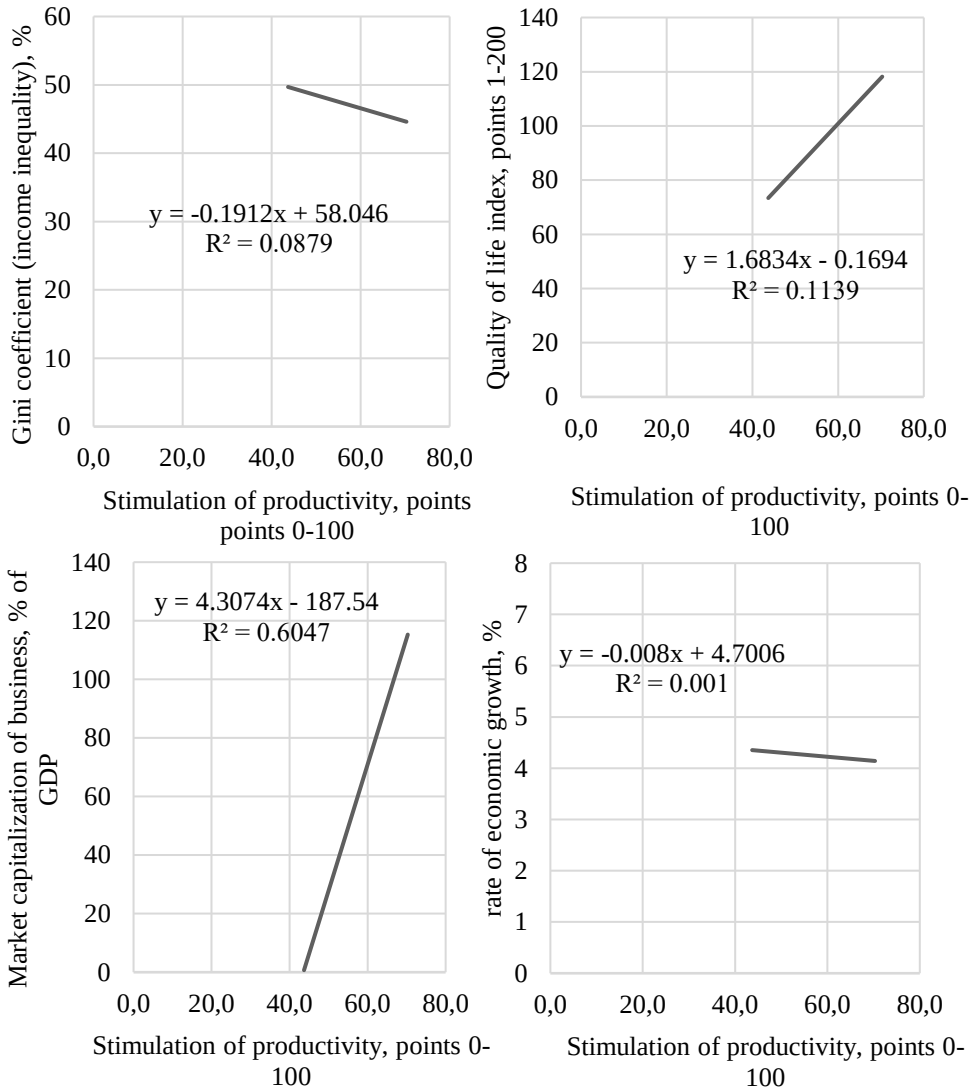

Figure 6. Regression curves of dependence of the potential advantages from stimulation of workforce productivity in developing countries in 2020.
Source: calculated and compiled by the authors

Table 4. Optimization of stimulation of work in developing countries in the period until 2024.

Indicator	Average value in the selection of developing countries in 2020	Optimal value in the selection of developing countries in 2025	Target growth of the value in 2025 as compared to 2020, %
P4Q index, shares of 1	1.39	2.50	80.10
Stimulation of productivity, points 1-100	56.67	66.20	16.82
Market capitalization of business, % of GDP	56.56	85.55	51.25
Rate of economic growth, %	4.25	6.46	52.02

Source: calculated and compiled by the authors.

As shown in Table 4, for market capitalization of business to grow by 51.25% (up to 85.55% of GDP) and economic growth rate to accelerate by 52.02% (up to 6.46% per year) in developing countries in the period until 2025, P4Q index should be increased from 1.39 in 2020 to 2.50 in 2025 – i.e., by 80.10%. The indicator of stimulation of productivity ("Pay and Productivity") has to grow from 56.67 points in 2020 up to 66.20 points in 2025 – i.e., by 16.82%.

4.4 The scientific and methodological approach to stimulation of work "P4Q" and an overview of the perspectives of its implementation in developing countries

Here we develop a scientific and methodological approach to stimulation of work "P4Q", which is based on the following formula:

$$B_{P4Q}=Pft*Pbl*Stl, \quad (2)$$

where B_{P4Q} – bonus for en employee for increased quality of products;

Pft – growth of company's profit due to higher quality of products, measured in monetary units (e.g., USD);

Pbl – probability of factual achievement of growth of profit due to higher quality of products, determined by the expert method, depending on the value of the advantages of quality for consumers and the expected demand (possibilities of sales), measured in per cent;

Stl – share of additional profit, which company is ready to share with an employee – spend it for stimulating the work – measured in per cent.

According to formula (2), bonus for an employee for increased quality of products is determined based on growth of company's profit due to higher quality of products in view of the probability of factual achievement of growth of profit due to higher quality of products, determined by the expert method depending on the value of the advantages of quality for consumers and expected demand (possibilities of sales), as well as in view of the share of additional profit that the company is ready to share with employee – i.e., spend it for stimulation of work.

For example, growth of company's profit due to higher quality of products (Pft) equals USD 100,000. Probability (Pbl) of factual achievement of growth of profit due to higher quality of products, determined by the expert method depending on the value of the advantages of quality for consumers and expected demand (possibilities of sales) is assessed by managers at 75%. Additional profit that the company is ready to share with employee – i.e., spend for stimulation of work (Stl) – equals 10%. Thus, bonus for the employee for increased quality of products will constitute: B_{P4Q}=100,000*0.75*0.1=7,500 (USD).

The advantage of the offered scientific and methodological approach is evaluation of not quality of products, which is difficult to measure, but its advantages – for consumers and the company. Due to this, evaluation is performed in monetary units, which simplifies the procedure of determining employee's bonus for increased quality of products. However, it is necessary to take into account higher subjectivity and risk of an error during stimulation of work with the P4Q approach, as compared to the approach aimed at stimulation of pay for productivity.

An overview of the perspectives of implementing the P4Q practice in developing countries is given in Table 5, which presents the results of SWOT analysis.

Table 5. SWOT analysis of the P4Q practice in developing countries.

Aspect of the analysis		Result of the analysis in developing countries
S	Preconditions for P4Q	– Progressive society and demanding consumers – growing demand for quality; – High level of human capital development and ability to increase the level of quality; – Companies' striving to enter world markets, in which competitiveness is determined by quality.
W	Barriers to P4Q	– Traditional orientation at productivity due to traditional practices of management with insufficient attention to growth of quality (use of standards); – Limited opportunities for individual evaluation and control of quality of products that are manufactured by each employee.
O	Perspectives for P4Q	– Accelerated digitalization and implementation of "smart" technologies of quality assessment in entrepreneurship; – Modernization of management practices and transition to emphasis on quality; – Development of culture of consumption and state regulation of entrepreneurship, oriented at refusal from standardization and at support for quality growth.
T	Threats to P4Q	– Slow digitalization of entrepreneurship and impossibility to evaluate individual results from the positions of quality; – Preservation of the foundation on the traditional management practices; – Negative influence of state and society, which is connected to increase of quality standardization.

Source: developed and compiled by the authors.

The preconditions to implementing the P4Q practice in developing countries (S) are progressive society and demanding consumers – growing demand for quality, high level of human capital development, and ability for increase of the level of quality, as well as companies' striving for entering world markets, in which competitiveness is determined by quality.

The barriers on the path of dissemination of the P4Q practice in developing countries (W) are traditional orientation at productivity due to traditional practices of management with insufficient attention to growth of quality (use of standards) and limited opportunities for individual evaluation and control of quality of products that are manufactured by each employee.

The threats to dissemination of the P4Q practice in developing countries (T) include slow digitalization of entrepreneurship and impossibility to evaluate individual results from the positions of quality, preservation of the foundation on the traditional management practices, and negative influence of state and society, which is

connected to increase of quality standardization

The perspectives of dissemination of the P4Q practice in developing countries (O) include accelerated digitalization and implementation of "smart" technologies of quality assessment in entrepreneurship, modernization of management practices and transition to emphasis on quality, and development of culture of consumption and state regulation of entrepreneurship, oriented at refusal from standardization and at support for quality growth.

5. Conclusion

It is possible to make the following conclusions. "Pay for Quality" (P4Q) is a new form of payment for work, which is very interesting for developing countries, for it allows creating well-paid jobs and using unique, intellectual, and skilled human resources in entrepreneurship. This will allow developing human potential and giving a powerful impulse to development of hi-tech private entrepreneurship, which is oriented at innovations and quality, and forming sustainable global competitive advantages based on high quality of products.

In developing countries on the whole, stimulation of work is very popular, and different approaches are used. Pay for productivity dominates in Malaysia and Russia; stimulation of quality is popular in Rwanda, Kazakhstan, and Egypt; stimulation of productivity and quality is used in China, Indonesia, and Thailand. However, stimulation of work is not popular in Chile and Turkey. During application of the P4Q approach to stimulation of work in developing countries, the following aspects are taken into account: satisfaction of consumers (correlation with happiness index – 57.16%), digitalization (correlation with business agility – 65.41%), and innovative activity (correlation with innovation index – 56.04%). Global competitiveness high technology exports have weak influence on payment for work (correlation – 20.40%).

Due to application of the P4Q approach to stimulation of work in developing countries, the rate of economic growth and market capitalization of business grow. According to the results of optimization, in the period until 2025 in developing countries P4Q index is to be increased by 80.10%. The indicator of stimulation of productivity ("Pay and Productivity") should grow by 16.82%. This will allow increasing market capitalization of business by 51.25% and accelerating the rate of economic growth by 52.02%. For this, a perspective scientific and methodological approach to stimulation of work "P4Q" is offered, the perspectives are outlines, and the applied recommendations for implementing it in developing countries are offered.

The results of the performed research allow substantiating and forming the scientific and methodological basis for wider dissemination of the P4Q approach to stimulation of work in entrepreneurship in developing countries. The obtained conclusions and recommendations could be useful also for developed countries. Their experience could be used for specifying the P4Q concept – which should be done in further works.

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