



The Impact of Tax Risk Indicators on the Company's Market Capitalization

Regina V. Nagumanova, Tatyana V. Erina, Aigul I. Sabirova *

Kazan Federal University, Institute of Management, Economics and Finance, Kazan, Russia

Received: 13/09/2019

Accepted: 22/11/2019

Published: 20/12/2019

Abstract

To date, empirical research is one of the reliable methods of scientific knowledge. It is aimed at collecting and analyzing data on the object of study. Its purpose is to identify and establish certain dependencies and patterns. All empirical studies are based on a clear scientific base and a rigorous organization process. In this regard, the organization's tax risk management system, as one of the components of the financial management system, also serves as an indicator of the effectiveness of the corporate tax management system itself. Financial management is a complex process, which consists in the effective use of all available financial resources in the organization. In order for the company or enterprise to be stable, and its market value to increase over time, it is necessary to combine the efforts of all structural divisions of the company. These units should work as a single, well-coordinated mechanism, and only then the goals of the organization will be fully achieved.

Keywords: tax risk, tax planning, risk management, company capitalization, risk factors, financial management.

1 Introduction

Given the continuity of the activities of many enterprises, it is important to eliminate the imbalance of interests of process participants, in other words, to harmonize the organization's financial management system, and as a result, tax burden management. Harmonizing this system is not necessary at one time, but systematically, comparing the results of the process with its main goals, setting priorities and comparing them with key indicators, monitoring and controlling the taxation management process of the company, in order to increase the efficiency of company management (11, 12, 13, 14).

A business is a complex investment product, the consumer usefulness of which is expressed in the ability to generate net cash flows, while ensuring the growth of well-being of owners. The system of internal corporate taxation influences all processes of the organization, the ultimate goal of this management is to increase the efficiency of the enterprise as a whole.

In scientific studies, in addition to the influence of the total tax burden as the main factor of tax risk on the economic growth of a business entity, the influence of the very fact of its quick and sharp change is considered, since, according to many experts, not only (and not so much) has a detrimental effect on the economy the magnitude of the tax burden, how

much is its chaotic and unpredictable fluctuation (1, 2, 4, 6, 10). The analysis showed that an increase in the tax burden leads to a decrease in the production activity of economic entities both in the industrial sphere and in the Russian economy as a whole.

2 Methodology

In most of the works that we examined, the indicators of tax burden act as an effective sign during the regression analysis, and as a factor variable - performance of the enterprise, presented in Figure 1. According to the results of an empirical study, there is a linear relationship between the indicators presented in Figure 1. In addition, for the purposes of tax planning, it is proposed to conduct a regression analysis, where the indicator of the tax burden acts as the effective sign, and the indicators included in the denominator of the tax burden indicator act as the factor indicator (Figure 2). The conducted studies examine the impact of the tax burden on the volume of production in the regions of the Russian Federation, which is characterized by various natural resource potentials: rich mineral resources, or knowledge-intensive production. In other words, the authors considered the influence of the tax burden on the main factor stimulating economic growth in a particular region. In their opinion, different industries and industries are not at all in the same position in terms of fiscal pressure exerted on them (3, 5, 7, 8, 9).

Corresponding Author: Aigul I. Sabirova, Kazan Federal University, Institute of Management, Economics and Finance, Kazan, Russia. Email: aigylkinyes@mail.ru.

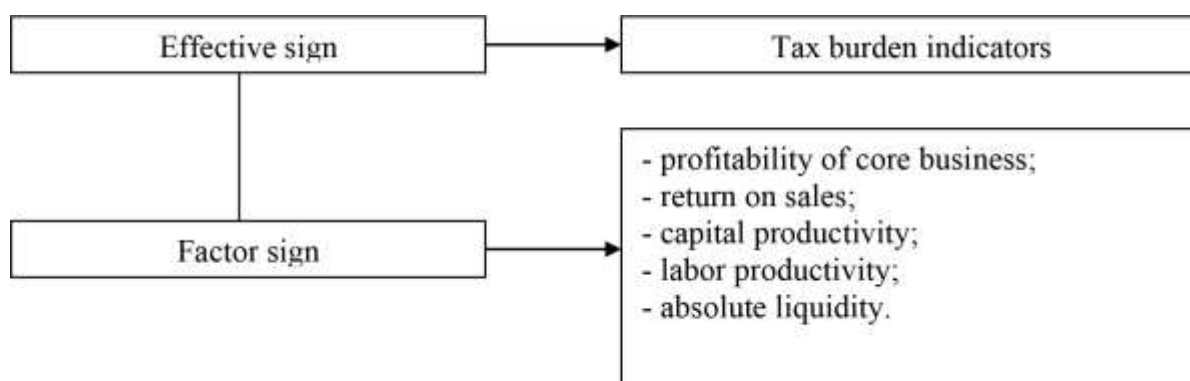


Fig. 1: Effective and factor signs in the construction of a regression model

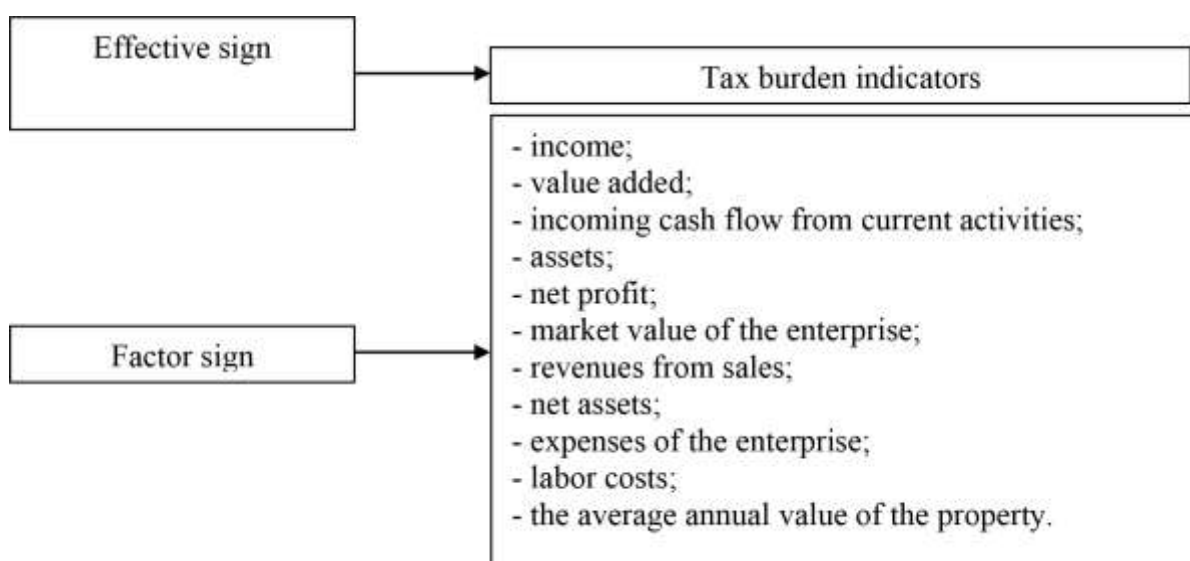


Fig. 2: Effective and factor signs in the construction of a regression model

Among foreign studies, one can also find works devoted to studying the effects of corporate tax planning on the market value of a company.

3 Results

The main goal of our study is to determine the impact of corporate tax risk indicators on the company's market capitalization. Financial management has the main goal of ensuring the well-being of shareholders, respectively, tax risk, as an object of financial management, can also affect the indicator of market capitalization. Our task is to correctly determine the main factors of tax risk and conduct a study of their impact on market capitalization. Moreover, as the main indicator that characterizes the market efficiency of the company, we will choose the indicator of economic value added or its derivatives (15, 16, 17, 18, 19, 20).

Thus, the main objective of the study is to study the nature, direction and degree of interconnection of indicators of corporate risk management and indicators that determine the effectiveness of the organization. As independent variables, we selected several indicators of corporate

taxation, which will be disclosed in more detail in the next paragraph of the study.

In the framework of this study, we formulated the following hypothesis: "tax risk factors have a significant impact on the company's market capitalization, expressed through the indicator of economic value added". In practice, serious, key decisions are never taken without taking into account tax consequences, since they, being a powerful tool of economic regulation, in some cases are capable of forcing enterprises to radically change the tactics of their actions. The absence of effective tax risk management tools at the enterprise can lead not only to heavy financial losses, but also to the inability of the organization to continue to exist, because due to significant tax burden (in the absence of an effective tax planning system), the business entity is in a much weaker competitive position market in comparison with participants using tax optimization tools of their activities, and directs their efforts not at achieved the final goal, and for the payment of all necessary taxes, respectively, due to the satisfaction of customers' needs, the market value of such an entity is lower. The main factor of tax risk is the fluctuation

of the tax burden of the company by more than 10%. In this regard, as the main indicator in the model, we will use the tax burden indicator (X_1) of the organization. According to the current legislation, which were able to be calculated using the SPARK database, we included other indicators, such as:

- The ratio of income and expenses of the company (X_2);
- Fluctuation in the amount of VAT deductions (HZ);
- Fluctuation of the indicator of profitability of sales by

net profit (X_5);

At the same time, to improve the quality of the model, we used the following variables:

- Financial leverage (X_4);
- Absolute liquidity ratio (X_6);
- Asset mobility ratio (X_7).

Thus, the inclusion of these factors in the overall system of factor sampling is considered logical. Table 1 lists all the variables used to test the hypothesis. To improve the quality of the model and bring it to the form of a linear function, absolute indicators are logarithmized. Therefore, the desired function in general form will look as follows:

$$\text{LnY}(t) = [\text{LnX}_1(t), X_2(t), \text{LnX}_3(t), X_4(t), X_5(t), X_6(t), X_7(t)], \quad (1)$$

where $\text{LnY}(t)$ is the natural logarithm of the economic value added of the company; $\text{LnX}_1(t)$ is the natural logarithm of the relative tax burden; $X_2(t)$ is the ratio of income and expenses of the company; $\text{LnX}_3(t)$ is value of VAT deductions; $X_4(t)$ is financial leverage; $X_5(t)$ is net profit margin; $X_6(t)$ is absolute liquidity ratio; $X_7(t)$ is asset mobility ratio; and t is the time period (year).

As a dependent variable, an indicator of a company's market performance, is an indicator of economic value added (EVA). EVA shows the excess of the company's net operating profit after taxes and capital expenditures; and combines the simplicity of calculation and the ability to evaluate the effectiveness of both the enterprise as a whole

and its individual divisions. EVA reflects various categories of organization activity (Fig. 3).

EVA is an indicator of the quality of management decisions: a constant positive value of this indicator indicates an increase in the value of the company, while a negative value indicates its decrease. The calculation of the dependent variable is performed according to the formula:

$$\text{EVA} = (\text{NOPAT} - \text{IC}) * \text{WACC} \quad (2)$$

or

$$\text{EVA} = (\text{ROIC} - \text{WACC}) * \text{IC} \quad (3)$$

where EVA is economic value added; IC is invested capital; NOPAT is net operating profit after taxes; WACC is weighted average cost of capital; and ROIC is return on invested capital. We calculated the dependent variable according to formula 3; the quantitative data necessary for this were taken from the SPARK database. To calculate the tax burden, the study uses a technique developed by the Ministry of Finance of the Russian Federation. According to this methodology, the company's tax burden represents the share of all tax payments paid in revenue from the sale of goods (work, services) for the reporting period, including income from other income:

$$\text{ONN} = [\text{NP} / (\text{V} + \text{VD})] * 100\%, \quad (4)$$

where ONN is relative tax burden; NP is the sum of all taxes paid by the enterprise; In is revenue from sales; and VD is revenue from other sales. Indicators of the tax burden by type of economic activity were taken from the Appendix to the Order of the Federal Tax Service "On Approving the Concept of a Planning System for Field Tax Audits" dated 05.30.2007 No. MM-3-06 / 333.

Table 1: List of variables used to build a regression model

No.	Variables
Y	Economic Value Added (L_n)
X_1	Relative tax burden
X_2	The ratio of income and expenses of the company
X_3	VAT deduction (L_n)
X_4	Financial leverage
X_5	Net profit margin
X_6	Absolute liquidity ratio
X_7	Asset mobility ratio

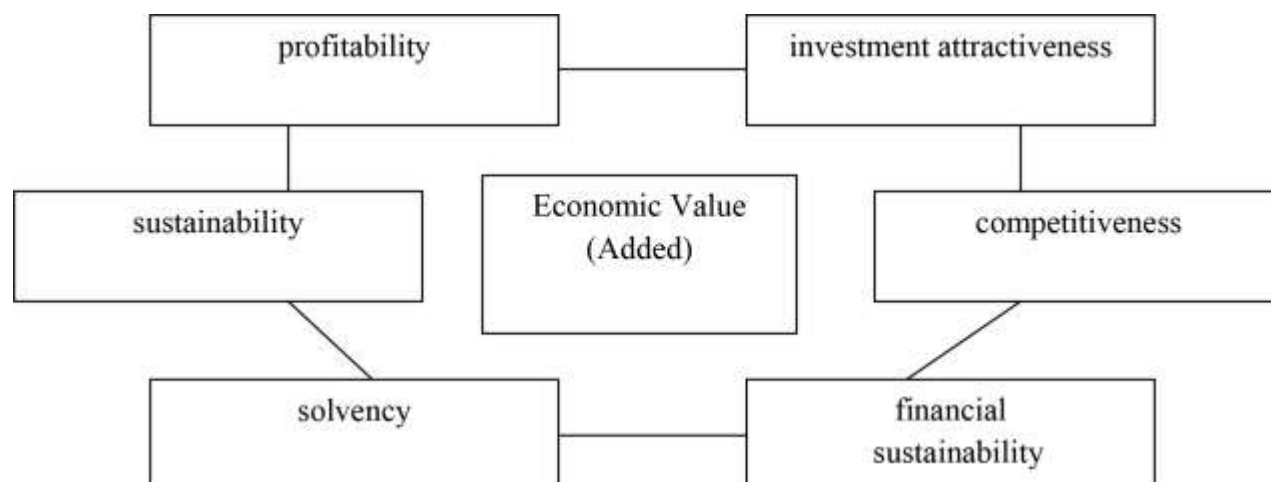


Fig. 3: The relationship between economic value added and other characteristics of the company

The company's income and expense indicators, as well as VAT deductions, were taken from the financial statements of the studied companies. Financial leverage is defined as the ratio of the total liabilities of the organization (both long-term and short-term) to the amount of equity:

$$O = (DO + KO) / SK \quad (5)$$

where: O is financial leverage; TO is long-term obligations of the organization; KO is short-term obligations of the organization; and SK is the amount of equity capital of the enterprise. Net profit margin is calculated as follows:

$$ROS = PE / V \quad (6)$$

where ROS is net profit margin; PE is the net profit of the organization; and In is revenue. The absolute liquidity ratio is calculated as follows:

$$Kabl = (DS + KfV) / TO \quad (7)$$

where: Kabl is absolute liquidity ratio; DS is cash; KfV is short-term financial investments; and THAT is current liabilities. The value of this indicator can also be found in the SPARK database. Asset mobility ratio was calculated:

$$KMobak = (DS + KfV) / OA \quad (8)$$

where Kmobak is asset mobility ratio; DS is cash; KfV is short-term financial investments; and OA is the value of current assets. In addition to the financial statements of the companies, the study also used industry-specific non-diversified risk ratios (leveraged beta) from the website of Asfat Damodaran. 25 Russian enterprises were selected as the empirical base, most of which are employed in the industrial sector of the economy. The industry sample structure is shown in Figure 4.

According to Figure 4, 36% of the sample (9 organizations) were enterprises engaged in the field of oil and gas production and oil refining, 20% (or 5 organizations) in the field of electricity; 16% (4 organizations) - in the transport and communications industry; 4% (1 organization) - in the field of transportation of petroleum products; 8% (2 organizations) - in the chemical industry; 4% (1 organization) - in the engineering industry; 12% (or 3 organizations) are employed in other services. The activities of enterprises were analyzed for 2015-2018. The sample is incredible - when selecting enterprises, certain conditions were met, such as: (a) legal form (public joint stock company) and (b) the presence of financial statements compiled in accordance with Russian accounting standards for the period under review. The sample we have formed can be considered representative of joint-stock commercial enterprises of Russia, since: each unit of the general population has an equal probability of falling into the sample; the selection of variables was made regardless of the trait we are studying; the number of units in the sample is large enough; the sample is relatively uniform. As a result of the Correlation program, we calculated a matrix of paired correlation coefficients, which is presented in the Table 2. Based on the analysis of the matrix of pair correlation coefficients, we can draw the following conclusion: none of the variables forms significant relationships with others, which means that we can continue the study and build a regression model. The results of the regression analysis for the first hypothesis are presented in the Table 3.

As is known, in order to obtain the best results from least-squares analysis, it is necessary to fulfill the following basic assumptions: homoskedasticity (constant variance of deviations) and the absence of autocorrelation. The analysis showed that in the model under consideration there is no autocorrelation of residuals and variances of deviations of significant variables are constant. Testing for the absence of multicollinearity of factors using the method of inflation factors showed that multicollinearity is absent in the model.

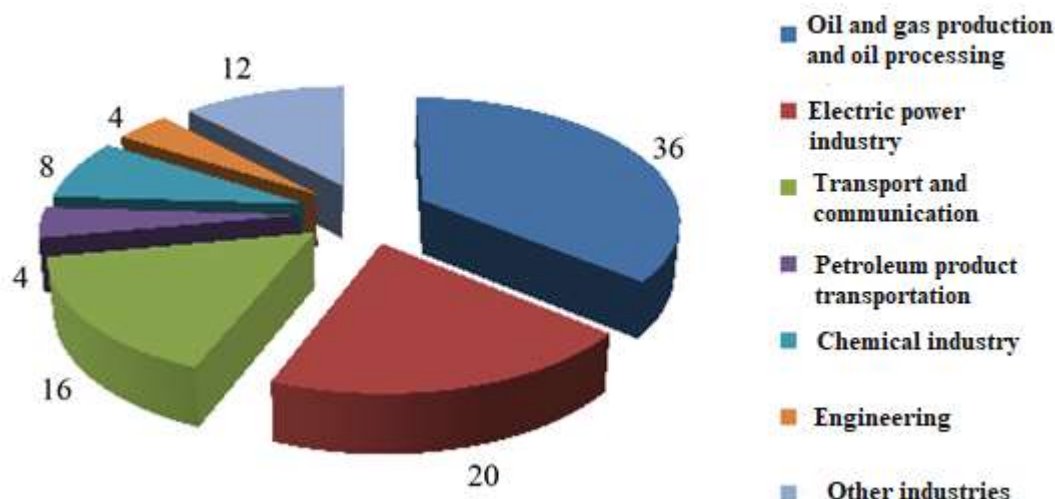


Fig. 4: Sectoral structure of the sample, in percent

Table 2: Matrix of paired correlation coefficients

	Y	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇
Y	1	0,2769	0,3637	0,313	-0,2182	0,4014	-0,3837	0,2507
X ₁	0,2769	1	0,3508	0,1692	0,0032	0,0165	0,0519	0,0822
X ₂	0,3637	0,3508	1	0,373	-0,1519	-0,0502	-0,2134	-0,1692
X ₃	0,313	0,1692	0,373	1	-0,1223	-0,162	-0,1286	-0,0445
X ₄	-0,2182	0,0032	-0,1519	-0,1223	1	0,0049	-0,0349	0,2023
X ₅	0,4014	0,0165	-0,0502	-0,162	0,0049	1	-0,3122	0,136
X ₆	-0,3837	0,0519	-0,2134	-0,1286	-0,0349	-0,3122	1	0,1945
X ₇	0,2507	0,0822	-0,1692	-0,0445	0,2023	0,136	0,1945	1

Source: compiled by the author

In general, the results of the analysis are at a fairly high level of significance. The multiple correlation coefficient is 0.75. It shows the tightness of the combined influence of factors on a productive trait. In our case, the multiple correlation coefficient indicates a close relationship between the indicator of economic value added and the independent variables included in the model. The value of the coefficient of determination is 66%, which confirms a sufficient degree of conditionality of the variation of the result by variation of factors, in other words, a fairly close relationship of factors with the result. The adjusted coefficient of determination is 64%. In magnitude, it is close to the coefficient of

determination, which also indicates a good specification of the regression equation. The assessment showed that the model is statistically significant at significance levels of 90%. The significance of individual parameters is estimated using Student's t-test. According to the results of the study, it turned out that the empirical free coefficient and all the coefficients considered by us for independent variables are statistically significant at significance levels of 90%. The regression equation takes the following form:

$$Y = -0,65 + 0,4 \cdot X_1 + 0,04 \cdot X_2 + 0,01 \cdot X_3 - 0,02 \cdot X_4 + 0,02 \cdot X_5 - 0,06 \cdot X_6 + 0,65 \cdot X_7 \quad (9)$$

where Y is economic value added; X₁ is relative tax burden; X₂ is ratio of income and expenses of the company; X₃ is

value of VAT deductions; X₄ is financial leverage; X₅ is net profit margin; X₆ is absolute liquidity ratio; and X₇ is asset mobility ratio.

Table 3: Checking the significance of the coefficients of the regression equation

Factors	Coefficients	t - statistics $t_{cr} = 2,605$	Determination coefficient R^2	F - statistics ($F_{cr} = 2,745$)	Relevance
Y	-0,652167	-4,67	0,66	311,3	Significant
X ₁	0,397116	3,761			Significant
X ₂	0,0359225	3,416			Significant
X ₃	0,0129198	3,673			Significant
X ₄	-0,0234624	-4,646			Significant
X ₅	0,0234530	5,365			Significant
X ₆	-0,0606797	-5,256			Significant
X ₇	0,646146	6,395			Significant

Source: compiled by the author

The regression analysis revealed certain relationships between the tax risk indicators and the market capitalization of the companies included in our sample, thereby confirming the main hypothesis posed in the study.

For the total sample of enterprises, indicators of corporate tax risk correlate with company value at an average level (correlation coefficients are 0.3). Of all the independent variables included in the model, the indicator of fluctuations in profitability - profitability by net profit (the correlation coefficient is 0.4) has the greatest influence on the effective factor. A negative correlation can be traced between the effective variable and indicators of financial leverage and absolute liquidity. Asset mobility also positively correlates with company value.

4 Conclusion

The obtained result demonstrates the importance and necessity of corporate tax planning and tax risk management, since, regardless of the specific goals of the organization, corporate taxation indicators have a significant impact on the company's market capitalization, which is a key indicator for a potential investor in making investment decisions.

5 Acknowledgements

The work is performed according to the Russian Government Program of Competitive Growth of Kazan Federal University.

References

1. Dedkova EG. Analysis and forecasting of tax costs in industrial enterprises: dis. Cand. econ. Sciences: 08.00.10. Dedkova Elena Gennadevna – Orel. 2010;149:78.
2. Ivanova IA. The development of the accounting and analytical system of tax obligations of agricultural organizations: dis. Cand. econ. Sciences: 08.00.12. Ivanova Irina Alekseevna. – Eagle. 201;160 p.
3. Novodvorsky VD, Sabanin RL. Assessment of the tax burden during the transition to a simplified tax system. Finance. 2007;6:24-2782
4. Turgel ID, Bozhko LG, Linshi S. State support for single-industry towns' development of Russia and Kazakhstan. Finance: Theory and Practice. 2016;2(92):22–32. (In Russ)
5. Ismagilov II, Khasanova SF. Algorithms of parametric estimation of polynomial trend models of time series on discrete transforms. Academy of Strategic Management Journal. 2016;15:20.
6. Mingazova AI, Khayrullina AD, Garipova EN. Contemporary Economic Models: Evidence from Russia. International Journal of Economic Perspectives. 2017 Sep 1;11(3):1858-1864
7. Kadochnikova EI, Ismigilov II. Measurement of cognitive growth factors of regional economy based on panel data. Mediterranean Journal of Social Sciences. 2014 Nov 11;5(24):377-382.
8. Cabello OG, Gaio LE, Watrin C. Tax avoidance in management-owned firms: evidence from Brazil. International Journal of Managerial Finance. 2019 Apr 8.
9. Alsadoun N, Naiker V, Navissi F, Sharma DS. Auditor-Provided Tax Nonaudit Services and the Implied Cost of Equity Capital. Auditing: A Journal of Practice & Theory. 2017 Jul;37(3):1-24.
10. Davis GA, Lund D. Taxation and investment decisions in petroleum. Energy J. 2018 Jun 1;39(6):189-208.

11. Rezaei M, Nemati K. The Impact of Purchase Intent, Word of Mouth Advertising and Skill Domain of Seller on Quality of Customer Relationship to Sale Life and Savings Insurance Policies (Case Study: Dana Insurance Co., Bushehr Province). *Dutch Journal of Finance and Management*. 2017;1(2):43.
12. Peres P, Moreira F, Mesquita A. Are really technologies at the fingers of teachers? Results from a Higher Education Institution in Portugal. 2018;3(1).
13. Chávez ME, García EM, Kramer CA. Confirmatory Model to Measure Attitude towards Mathematics in Higher Education Students: Study Case in SLP Mexico. *International Electronic Journal of Mathematics Education*. 2018 Dec 21;14(1):163-8.
14. Zhatkin D. Russian literary-critical reception of Burns at turning of the XIX–XX centuries. *Opción*. 2018;34(85-2):277-300.
15. Pagar T, Ghotekar S, Pagar K, Pansambal S, Oza R. A review on bio-synthesized Co3O4 nanoparticles using plant extracts and their diverse applications. *Journal of Chemical Reviews*. 2019 Sep 23:260-70.
16. Moosavi-Zare AR, Zolfigol MA, Khaledian O, Khakyzadeh V, Farahani MD, Kruger HG. Tandem Knoevenagel–Michael-cyclocondensation reactions of malononitrile, various aldehydes and dimedone using acetic acid functionalized ionic liquid. *New Journal of Chemistry*. 2014;38(6):2342-7.
17. Ghanbaria F, Monavarib SM, Sadrc MK, Rahimib R, Mirbolookia H. Pesticide in Soil and Rice Crop from North of Iran: Concentration and Risk Assessment. *Advanced Journal of Chemistry, Section A: Theoretical, Engineering and Applied Chemistry*. 2019 Aug 26.
18. Arzehgar Z, Sajjadifar S, Fekri MH. Synthesis of 2-Amino-4H-chromene Derivatives under Solvent-Free Condition Using MOF-5. *Chemical Methodologies*. 2019 Mar 1;3(2. pp. 145-275):251-60.
19. Youseftabar-Miri L, Hosseinjani-Pirdehi H. An efficient approach to the synthesis of some novel heterocycles related to indoline moiety using [BMim] Cl catalysis. *Asian Journal of Green Chemistry*. 2017 Oct 1;1(2. pp. 56-141):56-68.
20. Meles DK, Adnyana DP, Rinaldhi CP, Octaviani RR, Cempaka DK. The antidiabetic effect of bitter melon (*Momordica charantia* L.) extracts towards glucose concentration, langerhans islets, and leydig cells of hyperglycemic mice (*Rattus norvegicus*). *EurAsian Journal of BioSciences*. 2019 Jul 7;13(2):757-62.