





# “Investigating the relationship between tax culture and tax communication in Kazakhstan”

<b>AUTHORS</b>	Nurzhan Kuandykov  Yerlan Abil Arman Utepov  Aisulu Nurkey  Aisulu Abenova
<b>ARTICLE INFO</b>	Nurzhan Kuandykov, Yerlan Abil, Arman Utepov, Aisulu Nurkey and Aisulu Abenova (2021). Investigating the relationship between tax culture and tax communication in Kazakhstan. <i>Problems and Perspectives in Management</i> , 19(3), 197-210. doi: <a href="https://doi.org/10.21511/ppm.19(3).2021.17">10.21511/ppm.19(3).2021.17</a>
<b>DOI</b>	<a href="http://dx.doi.org/10.21511/ppm.19(3).2021.17">http://dx.doi.org/10.21511/ppm.19(3).2021.17</a>
<b>RELEASED ON</b>	Tuesday, 31 August 2021
<b>RECEIVED ON</b>	Wednesday, 30 June 2021
<b>ACCEPTED ON</b>	Tuesday, 17 August 2021
<b>LICENSE</b>	 This work is licensed under a <a href="https://creativecommons.org/licenses/by/4.0/">Creative Commons Attribution 4.0 International License</a>
<b>JOURNAL</b>	"Problems and Perspectives in Management"
<b>ISSN PRINT</b>	1727-7051
<b>ISSN ONLINE</b>	1810-5467
<b>PUBLISHER</b>	LLC “Consulting Publishing Company “Business Perspectives”
<b>FOUNDER</b>	LLC “Consulting Publishing Company “Business Perspectives”



NUMBER OF REFERENCES

**29**



NUMBER OF FIGURES

**9**



NUMBER OF TABLES

**8**

© The author(s) 2021. This publication is an open access article.



## BUSINESS PERSPECTIVES



LLC "CPC "Business Perspectives"  
Hryhorii Skovoroda lane, 10,  
Sumy, 40022, Ukraine  
[www.businessperspectives.org](http://www.businessperspectives.org)

**Received on:** 30<sup>th</sup> of June, 2021

**Accepted on:** 17<sup>th</sup> of August, 2021

**Published on:** 31<sup>st</sup> of August, 2021

© Nurzhan Kuandykov, Yerlan Abil,  
Arman Utepov, Aisulu Nurkey, Aisulu  
Abenova, 2021

Nurzhan Kuandykov, Doctoral  
Student, Faculty of Management,  
Academy of Public Administration  
under the President of the Republic  
of Kazakhstan, Kazakhstan.  
(Corresponding author)

Yerlan Abil, Dr., Rector, Academy  
of Public Administration under  
the President of the Republic of  
Kazakhstan, Kazakhstan.

Arman Utepov, Doctoral Student,  
Faculty of Management, Academy  
of Public Administration under  
the President of the Republic of  
Kazakhstan, Kazakhstan.

Aisulu Nurkey, Doctoral Student,  
Faculty of Management, Academy  
of Public Administration under  
the President of the Republic of  
Kazakhstan, Kazakhstan.

Aisulu Abenova, Doctoral Student,  
Faculty of Management, Academy  
of Public Administration under  
the President of the Republic of  
Kazakhstan, Kazakhstan.



This is an Open Access article,  
distributed under the terms of the  
[Creative Commons Attribution 4.0  
International license](https://creativecommons.org/licenses/by/4.0/), which permits  
unrestricted re-use, distribution, and  
reproduction in any medium, provided  
the original work is properly cited.

### Conflict of interest statement:

Author(s) reported no conflict of interest

Nurzhan Kuandykov (Kazakhstan), Yerlan Abil (Kazakhstan),  
Arman Utepov (Kazakhstan), Aisulu Nurkey (Kazakhstan), Aisulu Abenova (Kazakhstan)

# INVESTIGATING THE RELATIONSHIP BETWEEN TAX CULTURE AND TAX COMMUNICATION IN KAZAKHSTAN

## Abstract

The study demonstrated the level of tax culture as the basis for tax compliance. In turn, the formation of a strong tax culture depended on certain factors. Therefore, there were statements that the degree of such a culture depends on the level of tax communication. To show this connection, this paper analyzed the content of text arrays and products of communicative correspondence by keywords income and asset declaration in the Google search system (content analysis). Results of the analysis demonstrated more than 160 news articles and numerous social media posts. Moreover, the study contains the analytics of social media powered by YouScan artificial intelligence platform. This paper also presents the analysis and results of the sociological survey, in which more than a thousand people participated in the two biggest cities in Kazakhstan. The data of the survey were analyzed by the software Statistica 10 – the statistical data analysis system. The survey showed low tax awareness of citizens, almost 72% of respondents did not know about the introduction of the declaration of income and welfare. The results obviously demonstrated that there is a positive correlation between investigated issues, and poor utilization of information and communications technology by the government. In this way, this paper explored the relationship between tax culture and tax communication, where the awareness of citizens could be a huge step in the formation of honest taxpayers and increase confidence in government institutions.

## Keywords

Income Asset Declaration, modern communication technologies, tax compliance

## JEL Classification

H26, O17

## INTRODUCTION

Taxes for the government are one of the main instruments for ensuring sustainable economic growth, improving the quality of life, and the well-being of its population. To achieve these goals, the Republic of Kazakhstan starting from 2021 has been gradually leading the Income and Asset Declaration of Citizens (IAD). In 2025, in Kazakhstan, all citizens from the age of 18 will be required to submit IAD. In turn, it could raise the risk of tax evasion and the shadow economy, which could be a cornerstone issue in public policy. As a result, a closed loop of societal problems arises such as uneven taxation leading to an unfair distribution of public welfare. Some studies showed a negative correlation between tax culture and the size of the shadow economy. Several studies indicated the links between tax inequality and tax evasion, where there is a positive correlation between the perceptions of financial inequality and the prevalence of tax evasion.

Contemporaneously, in many countries, enough attention is paid to the behavior of taxpayers and ways of influencing the former to improve tax culture by strengthening social capital. Various behavioral, psychological, and sociological techniques are widely used to form the

conscientiousness of taxpayers. This is because, for the most part, people in their relationship with the government are more inclined to be honest when they see that the transaction is fair rather than being coerced. Accordingly, citizens are more prone to tax evasion if perceived welfare provided by the government is less than what can be considered fair. Consequently, there is a close relationship between taxpayer honesty and governmental communication. In this way, tax compliance should be viewed from an interdisciplinary perspective, applying psychology, sociology, and behavioral sciences. In this regard, tax culture is formed by the close relationship between the government and citizens. Accordingly, it could be assumed that the problem of tax evasion is on the plane of ignorance and the result of the low tax culture of citizens.

Accordingly, researchers from sociology, political science, and communication disciplines agree that information communication technologies (ICT) could help promote democratic values, build social capital, and promote government policy. Consequently, an important role in the formation of tax culture and the strengthening of social capital is played by those technologies. This is because the exposure of society to most of the social problems is usually mediated by mass communication. The level of engagement and trust are integral components of the overall concept of social capital.

The possibility of forming tax honesty could be done by constantly informing civil society about the contributions they make to society. This is because morality is based mainly on the “sanctions” of conscience.

---

## 1. LITERATURE REVIEW

It is believed that modern communication technologies contain a wide field of behavioral insights in the information age, which can be for government usage too. Vivid examples of such impacts can be seen during crises, pandemics, and transition periods for the government. Moreover, behavioral insights manifest themselves in almost all spheres of life and, in the public consciousness, by various goals, methods, and natures of influence are possible. For example, there are stereotypes, the formation of public opinion, selection and fabrication of information messages, mythologizing events, and much more (Sekareva, 2011).

Moreover, ICT could be a direct carrier, especially in the dissemination of knowledge, propaganda, and information (Gurevich, 2004; Grachev & Melnick, 2002; Xenos et al., 2014). Most business organizations use ICT as an effective management tool for the administration of organization resources while enabling increasingly global and dematerialized transactions. In public administration, ICT also plays an essential role, where structures and processes are designed to ensure accountability, transparency, equity, inclusiveness, and broad-based population participation. Accordingly, public administration is an interdis-

ciplinary and interagency field of study poured on relationships of authority, government, civil society, and the market, to legitimately govern themselves and act effectively (Canedo et al., 2018).

Information and communication are bound elements, which is necessary for a modern person because it is capable of causing new actions. The former two are internalized as a source of activity, which multiply and accelerate. Certainly, the information can significantly contribute to democratic citizenship, opening up different points of view of people, and pushing them to constantly rethink and clarify their position on public issues or vice versa (Laktionov, 2004). Psychologists note that the information that a person receives from the outside world is not limited to direct impressions coming to one from reality. Information comes through a long chain of processes that cause a more complex analysis of the information received, a comprehensive reflection of the properties of the perceived object, highlighting its essential characteristics and including it in the appropriate system of categories. This is why the information could play an essential role in enhancing the productive power of knowledge, which is the most important and perhaps the most significant in the global competition for power (Bruner, 1973; Lyotard, 1983). Thus, communication now plays a

decisive role in peoples' everyday interactions, for example, social networks (Huckfeldt & Sprague, 1995; Scheufele et al., 2004). Contemporaneously, the speed of information transfer is the main productive force, and it noticeably changes the composition of the active population in the majority. As an example, mass communication and social networks themselves have fundamentally changed the views on public communications strategies of many companies, including government bodies around the world. Through active social communication, a closer relationship with clients is achieved, emphasizing their importance, and their trust is strengthened. For instance, the transparency of the government budget, friendly state policy, and others could be shared by ICT technologies that may have a huge impact on society (Mangold & Faulds, 2009). Many studies emphasize that the active participation of the individual in the public and political life occurs through interaction with the government. Therefore, modern communication technologies have various indicators of political activity that have a positive relationship with society. Along with this, it is noted that mass communication could directly influence people, inviting them to participate in society and politics (Boulianne, 2015).

However, other studies point out that it does not matter how much time people spend on social networks interacting with the government. Positive attitudes could only be expected if there are politically oriented activities on social media (Carlisle & Patton, 2013). Nevertheless, communication with society should be mainly aimed at strengthening social ties and expanding exposure in order to disseminate necessary information (Zuniga et al., 2012; Tang & Lee, 2013). For this reason, close attention should be paid to the content of information, through which it is possible to make predictions and consequently models of civic behavior and trust towards public policy (Xenos et al., 2014).

That is why regular interaction of the government with the people could significantly increase the tax culture. This could be achieved through more frequent participation in public life, the development of more friendly relations, engaging citizens in public affairs, broadening their political views, as active civic participation builds strong social capital (Bennett, 1997; Hodgkinson, 2008). As Torgler

(2004) pointed out, tax culture is the intrinsic motivation of the taxpayer, which is a key factor in being tax-liable. Jayawardane (2015) noted that tax culture could be an internal perception of one's tax liability, influenced by psychological factors, social norms, a sense of fairness, and equity.

Although, there may be limited empirical research about the influence of social media use on public services, political attitudes, and the strengthening of social capital. However, there are unconfirmed examples that social media played a pro-social impact in the 2008 US presidential election, where the Obama campaign created an online networking site that successfully recruited campaign volunteers from across the country. Another example shows that about 20,000 Canadian Facebook members joined the government's campaign against copyright reform (Zuniga et al., 2012). In general, this can prompt government bodies to move towards a more efficient government system and make political views, institutions, and officials more responsive (Verba et al., 1995). In particular, a strong society can promote democracy through mass media (Putnam, 1993). According to OECD (2019), people usually perceive tax liabilities positively when they know that the government is working for the benefit of the population. Concomitantly, several studies confirm that citizens' attitudes towards taxation and their behavior change when they receive sufficient information and communication with government institutions. A high degree of tax communication with taxpayers could demonstrate the fairness of taxes paid, convey to taxpayers the positive aspects of good faith compliance with tax obligations and adverse effects it may have for the country as a whole (Onu & Oats, 2016).

Thus, modern communication technologies are a catalyst for socio-economic development and involve the adoption of a general strategy that affects plenty of sectors to maximize the informatization of the economy and society. ICT in this work is considered modern techniques and means of communication of government and society using information technologies for the search, gathering, storage, handling, and spreading of information. The objective of this paper is to investigate how these technologies could contribute to the strengthening of social capital and tax culture

too. The hypothesis is that tax communication is a positive driver in raising the level of tax culture of citizens.

## 2. METHODOLOGY

Firstly, for the analysis of the displayed level of tax communication, the study assessed the utilization of ICT by government bodies. The level of communication is assessed through content analysis (quantitative) for the keywords that contain “IAD” in the Google search engine (Google Kazakhstan). Analysis was done in February 2021. For qualitative analysis, the study relies on social media analytics powered by YouScan artificial intelligence platform. The period was 21.01.2021–21.02.2021.

Secondly, the study estimated the tax culture of the population through the social survey on the topic of introducing the IAD system in Kazakhstan. The survey was conducted among the population in the period between May–September 2019. To measure the knowledge of citizens as much as possible, the taxpayers who were in the building of tax administrations at the time of the survey were selected. Simultaneously, the questionnaire was carried out in the Service Centers. The total number of respondents was 1,302 people aged 18 and over, including 577 men and 725 women. Among the respondents, 440 are representatives of small and medium-sized businesses (SMEs), 450 people are employees of private organizations (including those working as representatives of SMEs), 157 civil servants and employees of budgetary organizations, and 255 people including students, unemployed individuals, and pensioners. Geographically, among the respondents, 901 respondents live in cities, and 401 people live in rural areas. Additionally, 597 respondents have a higher education, 149 respondents have an incomplete higher education, 313 respondents have specialized secondary education, and 243 respondents have a secondary education. Two large cities of the Republic of Kazakhstan, namely the city of Astana (now Nur-Sultan) and the city of Almaty, were selected as the venue for the sociological survey. These cities were not chosen by chance, the population of both cities exceeds 1 million, both cities are strategic, and small and medium businesses are developed in them.

The Statistica 10 software was chosen as a tool for analyzing the results of the questionnaire survey and to search for dependencies between variables.

The construction of contingency tables (cross-analysis) was chosen as a method of studying the relationship between variables. Simultaneously, in cross-analysis, it is important not only to establish the presence of a relationship between the variables, but the study also will use the chi-square test of independence  $\chi^2$  from the table of critical values ( $\chi^2$ ) of a distribution with a given number of degrees of freedom (hereinafter – Tabular value  $\chi^2$ ) to support for analyzing the impact of risk factors by calculating risks and odds ratios. Moreover, the study will apply the random forest machine learning algorithm (hereinafter – machine) to obtain correct predictions about the behavior of complex systems in the future based on their past state. The machine analyzes the available data about the historical behavior of complex technical systems and takes into account examples of previous predictions both for the initial formation of training schemes and for improving their functional characteristics (Cartiev & Kureichick, 2016). In turn, to assess the quality of the random forest algorithm, the following metrics were used (Ghoneim, 2019):

$$Accuracy = \frac{TP + TN}{TP + TN + FP + FN},$$

$$F_1 = 2 \cdot \frac{Precision \cdot Recall}{Precision + Recall}$$

## 3. ANALYSIS AND RESULTS

The first measurement of analysis is a content analysis of media, social networks on the topic of the IAD system in Kazakhstan. The quantitative analysis by keyword, “IAD” in the Google search engine showed 165 information and news sites for the period 2007–2021. Information is mainly presented by news sites (129 articles), NGOs (27 articles), and Government authorities (9 articles) (Figure 1).

The YouScan analysis includes: topic – IAD in Kazakhstan; the period is from 21.01.2021 to 21.02.2021. During the reporting period, the number of mentions – 1,244, on average posts per day – 39, the maximum posts per day 137 (25.01.2021),



Source: Authors' elaboration.

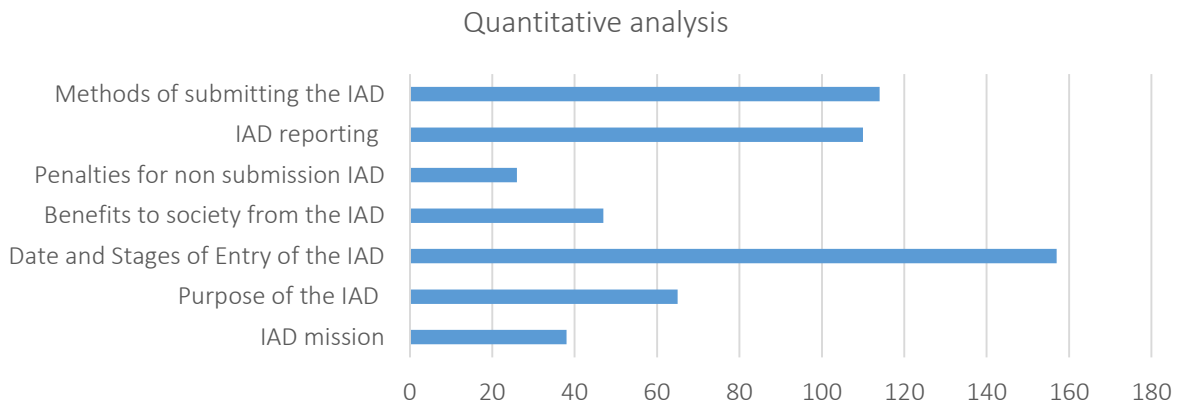


Figure 1. Content analysis of the IAD in Kazakhstan

Source: Authors' elaboration.

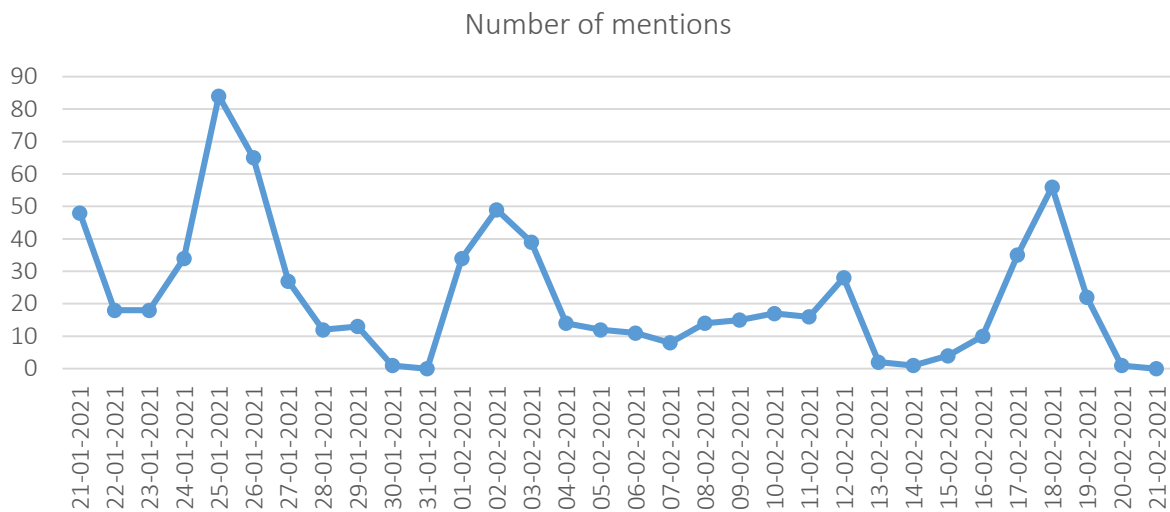


Figure 2. Mentions of the IAD in Kazakhstan

the number of sources (websites) – 112. Analysis of the report on frequently used words on the IAD topic shows 552 words – income, declaration – 412 words, property – 241 (Figure 2 and Table 1).

The platform shows the perception of information on the topic of the IAD and an overall number of mentions in Kazakhstan (Figures 3 and 4).

Table 1. Social media monitoring

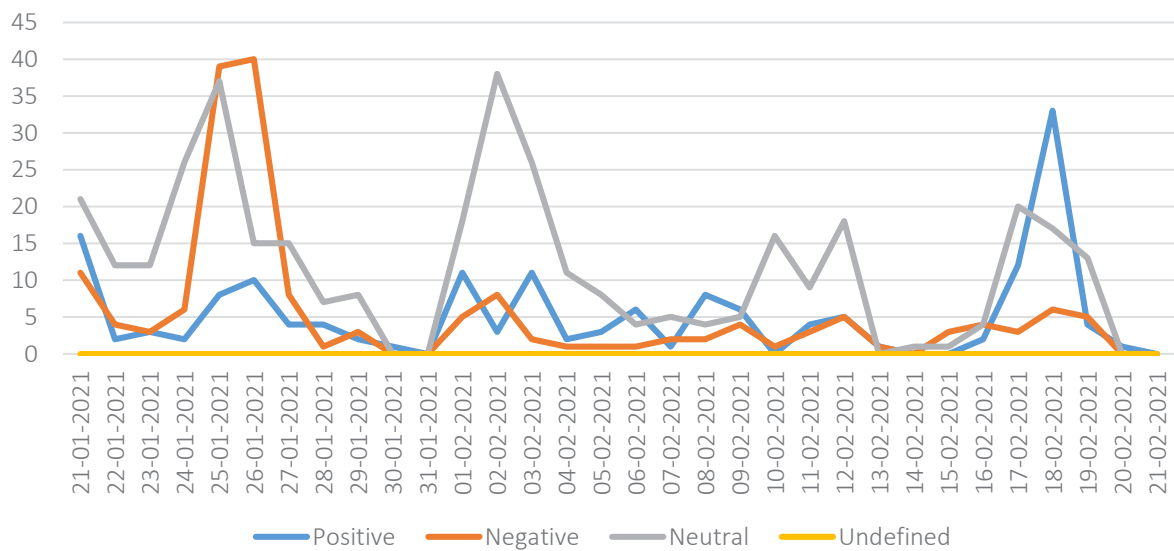
Source: Authors' elaboration.

Author	Profile	Total references	Negative	Positive	Neutral	Number of subscribers
Persons, users of social networks	Facebook	167	34	54	79	180,272
	Vkontakte	94	48	5	41	51,903
	YouTube	1	1	0	0	352,000
	Other social networks	6	2	3	1	438
Newsmakers	Facebook	20	1	6	13	568,726
	Vkontakte	99	26	27	46	1,212,108
	YouTube	51	16	10	25	6,572,830
	Other social networks	5	0	2	3	138,906
	News sites	62	8	19	35	0

**Table 1 (cont.).** Social media monitoring

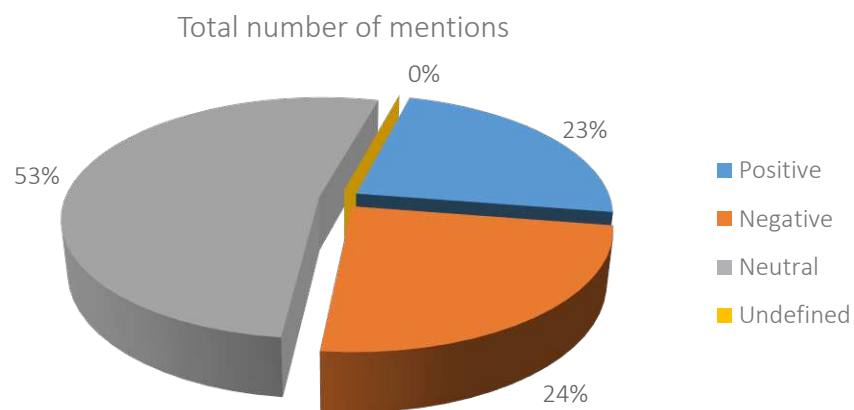
Author	Profile	Total references	Negative	Positive	Neutral	Number of subscribers
Non-governmental organization	YouTube	7	3	0	4	378,943
State bodies	Facebook	44	6	5	33	53,725
	Vkontakte	1	0	1	0	626
	YouTube	2	1	0	1	27,690
	Other social networks	2	0	1	1	1,412
Tax authorities	Facebook	48	5	9	34	45,528
	Vkontakte	9	0	2	7	1,087
	YouTube	21	3	5	13	10,501
	Other social networks	3	0	0	3	1,472

Source: Authors' elaboration.



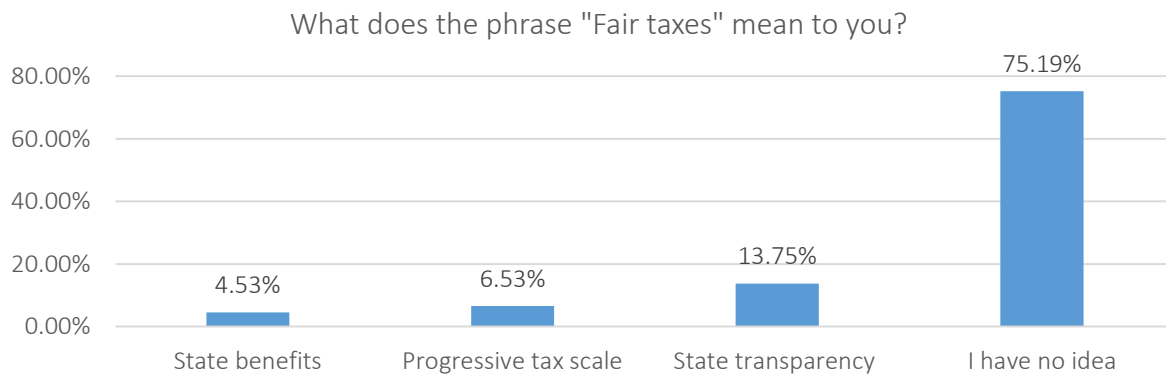
**Figure 3.** Tonality of information perception

Source: Authors' elaboration.



**Figure 4.** Number of mentions

Source: Authors' elaboration.



**Figure 5.** Statistical result of the assessment of tax culture

The second measurement of analysis is the measurement of the level of tax culture of citizens.

signs, each variable in the table has a high degree of correlation.

The first step in data analysis will be to measure the level of the respondents' tax culture by check the questions "What does the phrase "Fair taxes" mean to you?" (Figure 5 and Table 2).

The second assessment of the level of tax culture was made by analyzing the check questions, which might affect the level of tax compliance (Figure 6 and Table 3). The cross-analysis showed that the value of  $\chi^2$  significantly exceeds the Tabular value of  $\chi^2$  for each feature, there are no independent signs, and there is a high degree of correlation.

The analysis by cross-analysis showed that the value of  $\chi^2$  significantly exceeds the Tabular value of  $\chi^2$  for each feature, there are no independent

**Table 2.** What does the phrase "Fair taxes" mean to you?

Source: Authors' elaboration.

Categories	What does the phrase "Fair taxes" mean to you?		
	$\chi^2$	df	p
Age	91,1181	9	0,000000
Gender	24,236	3	0,000022
Education	108,902	9	0,000000
Field of activity	94,3333	18	0,000000

Source: Authors' elaboration.

Do you know that most of the cost of social infrastructure in the region and many other social activities are paid from taxes received?



**Figure 6.** Statistical result of the level of knowledge of citizens about the importance of taxes for society



**Table 3.** Results of cross-analysis

Source: Authors' elaboration.

Categories	Do you know that most of the cost of social infrastructure in the region and many other social activities are paid from taxes received?		
	$\chi^2$	df	p
Age	16,4121	3	0,000933
Gender	10,6937	1	0,00108
Education	93,4841	3	0,000000
Field of activity	84,7587	6	0,000000

**Table 4.** Error matrix

Source: Authors' elaboration.

	Real target (y = 1)	Real target (y = 0)
Prediction (y = 1)	159	89
Prediction (y = 0)	51	92

Note: Accuracy = 64%, F1-score = 63%.

The machine and the error matrix are presented in Table 4.

The influence of tax communication on the level of tax culture. The study analyses the level of awareness of citizens about the launch of the IAD by check questions, such as, from what sources they know and whether are sufficiently informed. These assessments show the level of tax communication with citizens.

Figure 7 and Table 5 show statistical analysis of the awareness showed that 80% of the interviewed respondents answered that they do not know why the IAD is introduced.

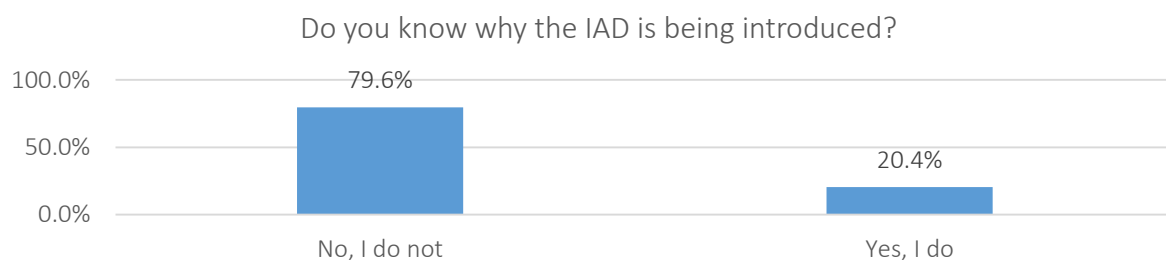
Figure 8 and Table 6 show the analysis of the answers on which sources of information citizens heard about the IAD.

**Table 5.** Analysis of the level of awareness of citizens about the IAD

Source: Authors' elaboration.

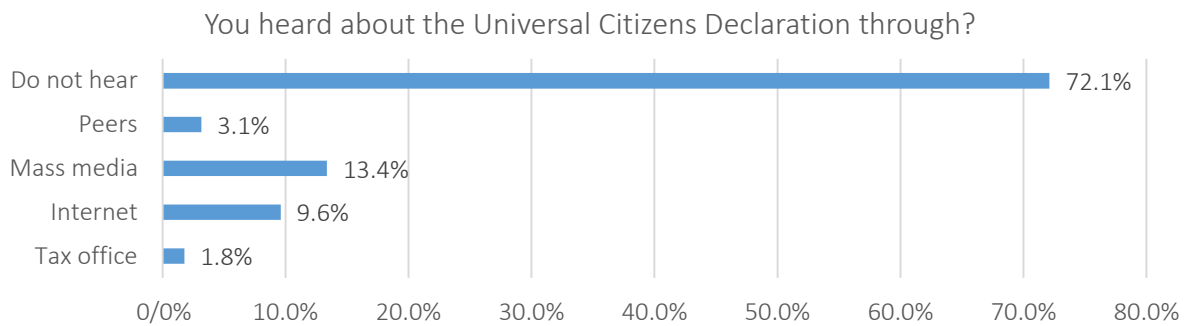
Categories	Do you know why the IAD is being introduced?		
	$\chi^2$	df	p
Age	17,8054	3	0,000482
Gender	0,11417	1	0,735443
Location	14,3438	2	0,000768
Education	51,5262	3	0,000000
Field of activity	41,972	6	0,000000

Source: Authors' elaboration.



**Figure 7.** The statistical result of measuring the level of awareness of citizens about the IAD

Source: Authors' elaboration.



**Figure 8.** Statistical analysis of information sources about the IAD

**Table 6.** Analysis of information sources about the IAD

Source: Authors' elaboration.

Categories	Did you find out about the Declaration?		
	$\chi^2$	df	p
Age	59,14	12	0,000000
Gender	7,57594	4	0,108407
Location	37,3372	8	0,000010
Education	78,5389	12	0,000000
Field of activity	81,4802	24	0,000000

Figure 9 and Table 7 show the analysis of the answers showed that 88% of respondents believe that the tax administration does not inform citizens about the IAD sufficiently only 12% are satisfied with the level of information.

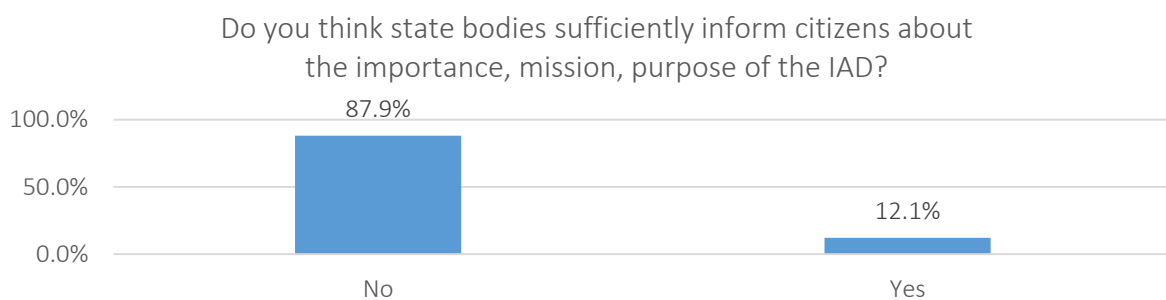
The cross-analysis showed that most of the  $\chi^2$  values exceed the  $\chi^2$  Tabular value and variables associated with a dependent variable in Tables 5, 6, and 7.

**Table 7.** The level of satisfaction of citizens with the information

Source: Authors' elaboration.

Categories	Do you think state bodies sufficiently inform citizens about the importance, mission, goals of the IAD?		
	$\chi^2$	df	p
Age	10,5619	3	10,561900
Gender	0,05945	1	0,807369
Location	19,0533	2	0,000073
Education	8,23588	3	0,041380
Field of activity	15,5744	3	0,016230

Source: Authors' elaboration.



**Figure 9.** Statistical degree of satisfaction of the information

**Table 8.** Error matrix

Source: Authors' elaboration.

	Real target ( $y = 1$ )	Real target ( $y = 0$ )
Prediction ( $y = 1$ )	140	67
Prediction ( $y = 0$ )	19	200

Note: Accuracy = 0.80%, F1-score = 0.79.

Table 8 shows the machine and the error matrix on the question “Do you know why the Declaration is introduced?”

The results of the content analysis of news, information articles, and social networks showed that 95% of the information described general information about the IAD, such as the introduction deadline, the postponement of the introduction date, which categories will be the first to submit the IAD, 66% of the articles provided information on the submission of the IAD, the deadlines declarations and tax reporting form. It is noteworthy that the information on the official websites of state bodies, Facebook pages (IAD team of the tax authority), Instagram pages of the tax authority, and YouTube presentations of representatives of state bodies, inform only about the timing, stages, and technical possibilities of submitting the IAD. Although, it was the representatives of state bodies who were supposed to carry out information work, motivating citizens to submit a declaration in good faith, pointing out the benefits for society from submitting an IAD (19% of the publication indicate the benefits of an IAD).

Simultaneously, the analysis of the influence of tax communication on the tax culture, displayed that the majority of citizens did not know and have not heard about the IAD. Moreover, unfortunately, most of the respondents did not know the need for the IAD system for society. The analyses indicated that the information and communication strategy of the tax administration is passive. Additionally, the population mostly receives general information, without providing explanations of the purpose of implementing the IAD system. The content analysis clearly shows mismanagement, where plenty of information about the introduction of the IAD is available on the websites of the tax administration, the government for citizens, and on the websites of other state bodies.

The measurement of the level of the tax culture according to data of the sociological research, quite

distinctly showed that the level of tax culture is at a low degree (see Figures 5-9). Moreover, the cross-analysis data shows that the variables – education, a field of activity, age, and place of residence – have a reasonably high correlation with tax communication (see Tables 2-7). Simultaneously, the high level of correlation here is not accidental, since most of the questionnaires were collected in tax departments, and most of the respondents are professionally connected with taxes. Consequently, education and occupation are highly correlated compared to the gender and age of the respondents. For a better understanding, it could be assumed from the quantitative analysis that the level of basic knowledge about taxes is not high, although the majority of respondents, due to their field of activity, are involved with taxes. This leads to the idea that professional taxpayers have more specific knowledge about taxation, whereas basic elements of the importance of taxes show low levels of knowledge. Hence, there could be a gap between tax culture (why being honest is beneficial for society) and tax compliance (being compliant to avoid penalties). In turn, the machine and error matrix (Tables 4 and 8) show the reliability of the respondents' answers and the reliability of the analyzed answers coincide by 64% and 80%. The results indicate that the respondents answered thoughtfully to the questions posed.

In this way, two analyses in different timing periods (approximately 18 months) indicated similar results of insufficient quality informing of the population. Consequently, the study assumed a cause-and-effect relationship between poor tax communication and low tax culture, which is the basis of tax compliance. In this way, the use of ICT could drive transformational change in the development of tax honesty. In turn, the full application of modern communication technologies by government bodies could stimulate such factors as democratic values in society, the formation of social capital, public transparency, all of which may have a strong positive impact on the tax culture. Thus, tax communication can be achieved by ICT.

## 4. DISCUSSION

OECD (2021) noted that an effective tax system is an essential element for mobilizing domestic resources. It also acts as a strong driving force for the sustainable development of the state. At the same time, many researchers in the field of tax compliance have repeatedly mentioned that effectively structured work with the population can have a relatively positive effect on improving the tax culture, which in turn could reduce tax evasion. That is why tax culture could be viewed as a subconscious element that could be strengthened by using ICT. Simultaneously, improving the tax culture could require fewer budgetary expenditures in comparison with constant control and auditing of taxpayers.

This study, based on the analysis and results, showed that the level of communication and information of the population is at a satisfactory level. Although, the official website of the tax administration, and other state bodies, social networks have published enough information on the IAD. Moreover, tax authorities have Facebook pages, where there is also information regarding IAD. It seems plenty of information is published by the government. However, there is a paradox as to why taxpayers' knowledge in terms of IAD is so low. Indeed, it is directly indicating a poor information flow and shows passive communication work by the tax administration.

In this regard, ICT tools could solve these issues, because through those instruments often government and the population become full-fledged participants. For instance, in the rule-making process, it is essential to provide the final stage of discussion of any current draft law, promptly delivering information about it. Consequently, the current and future utilization of ICT could be directed and controlled by evaluating and monitoring usage. In this regard, ICT should be a key and integrated component of the overall governance of the organization. Accordingly, communication technologies are made to design, direct, and achieve the desired behavior, the use of ICT can help. In turn, communication policies, roles, flows, and rules should be oriented at aligning with the public communication goals, enabling it to organize, planning to obtain the information, and deliver-

ing it to the population. Considering that, governments and citizens operate in a digital environment; therefore, the significant elements of an organization that deals with the citizens are the information and where the population can access it for further analysis. Additionally, there should be mechanisms for monitoring, retrieving, and delivering information consistent with the needs of content. The reason is that content could vary in nature, embodying relationships of authority, as well as the relationships of influence and persuasion, coercion and manipulation. Nevertheless, positively oriented information and vision could inspire the capacity for development, effectiveness, and agility to adapt to a quickly changing information age. In short, ICT with a governmental purpose could be a system through which the present and future use are directed and controlled, involving the assessment and directing of support to projects (Canedo et al., 2018).

Thus, ICT is in fact endowed with almost all the signs of an effective, optimizing way of implementing communication between citizens of society. Communication technologies have a great impact on forging strong social media connections to create a friendly customer environment and mobilize information. Taking the example of marketing and ICT strategies of many large companies, more than 90% of customers consider that companies should have a social media presence, and most of them believe that companies should interact through social media to be more efficient (CONE, 2008). Simultaneously, public relations could be divided into three groups. First, the emphasis is on network size. Second, a focus on social connections between groups, organizations, and activists. Finally, a focus on spreading information through like-minded groups (Boulianne, 2015). In addition, some studies provided empirical justifications that there is a clear positive correlation between the experience of interactions between a client and a company in which, if the experience was positive, further positive cooperation is noted. Consequently, this fact could positively influence the further participation and effective formation of social capital in the political processes of a government (Levine, 2007).

Summing up, the IAD is an essential step in reforming the income tax, where it could be re-

garded as a vital asset in mobilizing resources for the budget. Therefore, for the development of this asset, the tax administration needs to mobilize communication work, increase the involvement of citizens by popularizing and promoting the image of the IAD. Tasks with priority can be defined such as engaging events among the population, social support for online and offline

programs for involving citizens. Therefore, ICT could boost publicity by posting information on the public pages of large social networks, blogs, communities and forums, and tracking the reactions of the audience by the number of received likes, reposts, and views. From this, it can be concluded that ICT could be a crucial tool in promoting the image of the IAD.

---

## CONCLUSION

This study aimed to investigate the relationship between tax culture and tax communication. This work investigated the relationship at theoretical and methodological levels. Based on the results of the content analysis and sociological research, a methodology for assessing the use of ICT by the tax administration and measuring the level of tax culture of citizens was developed.

It was shown that a positive correlation between tax culture and the level of tax communication exists. For instance, the content analysis obviously indicated a poor flow of information on the topic of IAD, such as repeated information in Kazakhstan mass media. At the same time, high social capital can be formed due to effective communication of the state apparatus as a whole, where the mechanism of interaction between state bodies and citizens is established and the infrastructure functions without a barrier. In turn, the sociological study complements the picture of the passive communication work of the tax administration in Kazakhstan. For example, most of the respondents do not have sufficient information for what purposes the declaration of welfare is being introduced. At the same time, the monitoring of the information provided by the tax administration was not noticed, which indicates the ineffective use of ICT tools. In turn, it leads to insufficient understanding of the good intentions of the state. It could be regarded by society as an additional tax burden, and a possible risk of citizens moving into the shadow economy. In this way, the study proved that governmental communication plays a crucial role in strengthening tax culture.

However, in this study, not all aspects of the lives of citizens are covered. Therefore, future research in this direction is needed. At the moment, there are less than five years before the full launch of the IAD in Kazakhstan. For instance, the first stage covers all civil servants in Kazakhstan – they should fill the declaration in 2021, the last stage is going to cover all citizens in 2025 – more than 14 million people. In this regard, tax communication should activate the process of citizen engagement to avoid a deterioration of the socio-psychological state of society and individual citizens. It is for this reason that it is necessary to conduct an in-depth analysis of the factors affecting the tax culture of the population. The previous can be achieved by defining focus groups with citizens whose tax cultures are amenable, to improve the overall tax culture. Along with this, modern communication technologies could significantly strengthen trust in the state institutions of Kazakhstan, thereby greatly enhancing democratic values in society.

## AUTHOR CONTRIBUTIONS

Conceptualization: Nurzhan Kuandykov.

Data curation: Nurzhan Kuandykov, Aisulu Nurkey, Aisulu Abenova.

Formal analysis: Nurzhan Kuandykov, Yerlan Abil, Arman Utepov, Aisulu Nurkey, Aisulu Abenova.

Investigation: Nurzhan Kuandykov, Yerlan Abil, Arman Utepov.

Methodology: Nurzhan Kuandykov, Yerlan Abil, Arman Utepov, Aisulu Nurkey, Aisulu Abenova.

Resources: Nurzhan Kuandykov.



Software: Nurzhan Kuandykov.

Supervision: Yerlan Abil, Arman Utepov.

Validation: Nurzhan Kuandykov, Yerlan Abil, Arman Utepov, Aisulu Nurkey, Aisulu Abenova.

Visualization: Nurzhan Kuandykov, Yerlan Abil, Arman Utepov, Aisulu Nurkey, Aisulu Abenova.

Writing – original draft: Nurzhan Kuandykov.

Writing – review & editing: Nurzhan Kuandykov.

## REFERENCES

- Bennett, S. (1997). Knowledge of politics and sense of subjective political competence. *American Politics Quarterly*, 25(2), 230-240. <https://doi.org/10.1177%2F1532673X9702500205>
- Boulianne, S. (2015). Social media use and participation: a meta-analysis of current research. *Information, Communication & Society*, 18(5), 524-538. <https://doi.org/10.1080/1369118X.2015.1008542>
- Bruner, J. (1973). *Beyond the information given: Studies in the psychology of knowing*. London: W. W. Norton, Incorporated.
- Canedo, E. D., Costa, R., Sausa, J. R. T., & Amvame-Nze, G. (2018). Best Practices Kits for the ICT Governance Process within the Secretariat of State-Owned Companies of Brazil and Regarding these Public Companies. *Information*, 9(6), 141. <https://doi.org/10.3390/info9060141>
- Carlisle, J., & Patton, R. (2013). Is Social Media Changing How We Understand Political Engagement? An Analysis of Facebook and the 2008 Presidential Election. *Political Research Quarterly*, 66(4), 883-895. <https://doi.org/10.1177%2F1065912913482758>
- Cartiev, S., & Kureichick, V. (2016). A classification algorithm based on the principles of a random forest for solving the forecasting problem. *Software Products and Systems*, 2, 11-15.
- CONE. (2008). *2008 Business in Social Media Study*. Retrieved from <https://www.conecomm.com/2008-cone-communications-business-in-social-media-study-pdf>
- Ghoneim, S. (2019, April 2). *Accuracy, Recall, Precision, F-Score & Specificity, which to optimize on? Based on your project, which performance metric to improve on. Towards data science*. Retrieved from <https://towardsdatascience.com/accuracy-recall-precision-f-score-specificity-which-to-optimize-on-867d3f11124>
- Grachev, G. V., & Melnick, I. K. (2002). *Manipulirovanie lichnostju. Organizacija, sposoby i tehnologii informacionno- psihologicheskogo vozdejstvija [Personality manipulation. Organization, methods and technologies of information and psychological impact]*. Moscow: Algorithm. (In Russian).
- Gurevich, P. S. (2004). *Tretia volna, Alvin Toffler [The Third Wave by Alvin Toffler]*. Moscow: Izdatelstvo ACT – ACT Publishing. (In Russian).
- Hodgkinson, T. (2008, January 14). *With friends like these...* The Guardian. Retrieved from <https://www.theguardian.com/technology/2008/jan/14/facebook>
- Huckfeldt, R., & Sprague, J. (1995). *Citizens, politics, and social communication: Information and influence in an election campaign*. New York: Cambridge University Press.
- Jayawardane, D. (2015). Psychological Factors affect Tax Compliance-A Review paper. *International Journal of Arts*, 4(6), 131-141. Retrieved from [https://www.ijac.org.uk/images/frontImages/gallery/Vol\\_4\\_No\\_6/15\\_131-141.pdf](https://www.ijac.org.uk/images/frontImages/gallery/Vol_4_No_6/15_131-141.pdf)
- Laktionov, A. (2004). *Informacionnoe obshchestvo [Information society]*. Moscow: Izdatelstvo ACT – ACT Publishing. (In Russian).
- Levine, P. (2007). *The Future of Democracy: Developing the Next Generation of American Citizens (Civil Society: Historical and Contemporary Perspectives)*. Lebanon, NH: University Press of New England.
- Lyotard, J. (1983). *La condition postmoderne*. Paris: Ed. de Minuit. (In French).
- Mangold, G., & Faulds, D. (2009). Social media: The new hybrid element of the promotion mix. *Business Horizons*, 52(4), 357-365.
- OECD. (2019). *Tax Morale: What Drives People and Businesses to Pay Tax?* Paris: OECD Publishing. Retrieved from <https://www.oecd.org/tax/tax-morale-f3d8ea10-en.htm>
- OECD. (2021). *OECD work on taxation*. OECD Publishing. Retrieved from <https://www.oecd.org/tax/centre-for-tax-policy-and-administration-brochure.pdf>
- Onu, D., & Oats, L. (2016). Paying tax is part of life: Social norms and social influence in tax communications. *Journal of Economic Behavior & Organisation*, 124, 29-42. <https://doi.org/10.1016/j.jebo.2015.11.017>
- Putnam, R. (1993). *Making democracy work: Civic traditions in modern Italy*. Princeton, NJ: Princeton University Press.
- Scheufele, D. A., Nisbet, M. C., Brossard, D., & Nisbet, E. C. (2004). Social Structure and Citizenship: Examining the Impacts of Social Setting, Network Heterogeneity, and Informational Variables on Political Participation. *Political Communication*, 21(3), 315-338. <https://doi.org/10.1080/10584600490481389>
- Sekareva, I. (2011). Reklamnye i televizionnye mify kak forma manipuljacii soznaniem [Advertising and television myths as a form of manipulation of consciousness]



- ing and television myths as a form of manipulation of consciousness]. *Nauchnyj potencial: raboty molodyh uchenyh – Scientific potential: the work of young scientists*, 4, 241-244. (In Russian). Retrieved from <https://cyberleninka.ru/article/n/reklamnye-i-televizionnye-mify-kak-forma-manipulyatsii-soznanii>
24. Tang, G., & Lee, F. (2013). Facebook Use and Political Participation: The Impact of Exposure to Shared Political Information, Connections With Public Political Actors, and Network Structural Heterogeneity. *Social Science Computer Review*, 31(6), 763-773. <https://doi.org/10.1177%2F0894439313490625>
25. Torgler, B. (2004). *Tax Morale, Trust and Corruption: Empirical Evidence from Transition Countries* (Working Paper No. 2004-05). Center for Research in Economics, Management and the Arts. Retrieved from [https://www.researchgate.net/publication/5010335\\_Tax\\_Morale\\_Trust\\_and\\_Corruption\\_Empirical\\_Evidence\\_from\\_Transition\\_Countries](https://www.researchgate.net/publication/5010335_Tax_Morale_Trust_and_Corruption_Empirical_Evidence_from_Transition_Countries)
26. Torgler, B., Schaffner, M., & Macintyre, A. (2007). *Tax Compliance, Tax Morale and Governance Quality* (Working Paper). Center for Research in Economics, Management and the Arts. Retrieved from [https://www.researchgate.net/publication/46455651\\_Tax\\_Compliance\\_Tax\\_Morale\\_and\\_Governance\\_Quality](https://www.researchgate.net/publication/46455651_Tax_Compliance_Tax_Morale_and_Governance_Quality)
27. Verba, S., Schlozman, K., & Brady, H. (1995). *Voice and Equality Civic Voluntarism in American Politics*. Cambridge, MA: Harvard University Press.
28. Xenos, M., Vromen, A., & Loader, B. (2014). The great equalizer? Patterns of social media use and youth political engagement in three advanced democracies. *Information, Communication & Society*, 17(2), 151-167. <http://dx.doi.org/10.1080/1369118X.2013.871318>
29. Zuniga, H., Jung, N., & Valenzuela, S. (2012). Social Media Use for News and Individuals' Social Capital, Civic Engagement and Political Participation. *Journal of Computer-Mediated Communication*, 17(3), 319-336. <https://doi.org/10.1111/j.1083-6101.2012.01574.x>