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Original article

A Study of the Relationship Between Job Crafting and the Job Performance of Employees in Pakistan

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Abstract

Job crafting is an important concept in the field of management. Employees often look for altering their tasks to achieve the desired results. Therefore, the purpose of this study is to examine the relationship between job crafting and the job performance of employees through an explanatory role of work engagement. An employee dedicated to his job is open to practicing job crafing, and ultimately develops the task and contextual performance of the employee. This study is cross-sectional in nature and data was collected from IT sector specifically software houses employees from Pakistan using standard questionnaires. A total of 350 questionnaires was distributed electronically, and 300 valid questionnaire responses are used for data analysis purposes. A random sampling technique is adopted to collect data from software house employees. SPSS version 20 software was used for preliminary data analysis and Smart PLS 3 was used to test the hypotheses of the study. Results revealed that the relationship between job crafing and job performance is significant and work engagement partially mediates their relationship. A significant implication for practitioners here is that improvement in job performance of employees requires a bottom-up approach of JC in the organizations. Job Demands-Resources (JD-R) serves as a torch bearer in this study.

Keywords: Job Crafting, Work Engagement, Job Performance, Job Demands-Resources, IT Sector, PLS SEM

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1. INTRODUCTION

Organizations need to rethink their job designs in order to stay ahead of the competition. Job redesign is related to the activities of employees, their obligations, the assignments required to be completed, and how those undertakings and obligations are organized and performed (Morgeson & Humphrey, 2008; Parker & Ohly, 2008). JC (job crafting) is the method through which employment attributes can be changed to improve work quality. JC can have 'top-down' components (for example, driven by administrators) or 'bottom-up' components (for example, started by employees) (Grant & Parker, 2009). Organizations need to have people who are more engaged and committed in their jobs (Khan et al., 2016) and perform well in order to accomplish organizational goals (Khan et al., 2021). Without the much-needed efforts and improved performance of employees. Employees should strive for job redesigning with motivating potential, employees additionally need to assume responsibility for their very own work-related prosperity. Wrzesniewski & Dutton (2001) have contended that employees can do shape the limits of their employments and make a workplace that fits their inclinations, abilities, and capabilities. This procedure of proactively influencing one's activity is called JC.

A purpose behind the significance of a person's inclusion in redesigning a job is that once employees know how they can make their work ideal and creative, they can screen their job characteristics and mediate when necessary to anticipate aggressive results like demotivation and weakened performance (Tims et al., 2014). In order to use the JD-R model to guide JC research, this study frame JC in terms of this model. More specifically, we feel that employees may change their levels of job demands and job resources in order to align them with their own abilities and preferences. An employee may craft these aspects of the job in three ways according to this model: (1) the employee may increase the level of job resources available at work, (2) the employee may increase the level of job demands at work and (3) the employee may decrease the level of job demands at work. The second and third dimensions might seem contradictory, but, as LePine & Podsakoff (2005) point out, some demands can be hindering and therefore stressful (e.g. working with the wrong materials), while other demands can be challenging for the employee (e.g. high task complexity). This study take both into account, because decreasing the hindrance demands and increasing the challenge demands may both lead to positive outcomes for the employee (e.g. enhanced JP of employee).

From the organizational context, JC would be an element of the job activities of its individual employee. An employee performing his assigned tasks and activities to achieve his job goals is called his task performance. Employees also performs some activities which are not defined in their job description like helping their co-worker in his work to achieve his job goals are called contextual performance. Task and contextual performance both lie under the umbrella of JP (Bowen et al., 2000; Griffin et al., 2000). In this study, the causal relationship between JC and JP, along with the mediating effect of WE will be examined. Lastly, Job Demands Resources theory and social exchange theory explained the relationships as summarized in table 1.

Problem Statement. Enormous growth is visualized in JC of IT sector employees in the current era but only few studies have been conducted to identify the factors that are affected by JC of IT sector employees. Employees have been involved in crafting their

jobs working in software houses, its extent may vary, but its existence is unchallenged. This research is going to address the comprehensive theoretical and empirical gap by examining the impact of JC of employees on their JP while WE serve as a mediator in their relationship. Number of studies has used JD-R in this context (Tims et al., 2015; Petrou et al., 2015) but this study has utilized social exchange theory perspective as well in domain of IT sector which is quite rare in this context as per the best knowledge of the researchers.

TABLE 1. Theoretical linkages

Theory	Explanation	Reference
Job Demands Resources theory (JD-R)	The relationship between job resources and workplace challenges and the fact that motivated workers mobilize their own job resources and challenges may help to sustain engagement over time.	(Bakker, 2011)
Social Exchange Theory	Exchange of resources from and individual to organization. It is expected that employees with resources are willing to invest these resources in performing their tasks	(Saks, 2006)
Note: Complied by Authors		

All of these variables and their relationships mentioned above are explained in relation to Job Demands-Resources Theory so this theory will serve as a torch bearer for present study.

Research Questions:

1. Does JC predict JP of employees working in software houses of Pakistan?
2. Does JC predict WE of employees working in software houses of Pakistan?
3. Does WE predict JP of employees working in software houses of Pakistan?
4. Does WE mediate the relationship between JC and JP of employees working in software houses of Pakistan?

Research Objectives:

1. To examine the relationship of JC and JP of software houses employees.
2. To examine the relationship of JC and WE of software houses employees.
3. To examine the relationship of WE and JP of software houses employees.
4. To examine WE as a mediator between the relationship of JC and JP of software houses employees.

Significance of Study. In the present, IT sector, the requirement for employees to be preventive, is expanding quickly (Parker et al, 2006). Organizations need employees to be adaptable and self-starting so as to effectively adjust to rearrangements and changing work activities (Belschak & Hartog, 2010). These various advantageous impacts make proactive conduct a captivating theme to ponder more with regard to profundity. A promising idea of proactive conduct at work is JC. Job crafters are individuals who effectively form both what their activity is physical, by changing a job's assignment limits, what their activity is intellectual, by changing the manner in which they think about the connections among job activities, and what their activity is social, by changing the association and connections they have with others at work (Wrzesniewski & Dutton,

2001), with the objective of winding up progressively drew in, satisfied, resilient, versatile and flourishing at work (Berg et al., 2008; Tims et al., 2014).

2. LITERATURE REVIEW

Previous studies have demonstrated a beneficial relationship between job crafting activities and employees' job performance, particularly those aimed at extending one's employment boundaries (Demerouti et al., 2015; Kooij, Tims, & Akkermans, 2017) and conducted in Turkey (Maden-Eyiusta & Alten, 2021) and China (Zhang & Liu, 2021). However very limited evidence is available on examining the influence of job crafting behavior on job performance and no study has been conducted on this line by examining the mediatory role of work engagement within IT sector. Hence, this study is unique in nature in this regard. Researchers will have more evidence and direction to form hypotheses regarding the motivating results of job crafting and, more broadly, the employee engagement process with further investigation of these systems. Examining the psychological mechanisms that relate work crafting behaviors to performance is crucial from a practical standpoint in order to assess the motivating potential of various job crafting behaviors.

The obtained structural and social resources of JC at work, namely expanded number of resources, more noteworthy independence, better development opportunities, functional exposure, and transfer of skill from employers can be anticipated to prompt higher work commitment that might enhance personal satisfaction in non-work domains and further develop the general JP of representative (Tims et al., 2015; Siddiqi, 2015).

When representatives are given the opportunity to craft their positions according to preference, they feel a sense of authority over their work. This sort of feeling is a positive inclination for further developing the work execution of service sector (IT area) representatives (Bakker et al., 2012; Brown et al., 2002; Heejung et al., 2011).

Moreover, both the JC, and subsequent work commitment cause representatives to feel that their positions are more beneficial, significant, or something they should heavily invest in. Researchers like Loscocco (1989) and Tims et al. (2004) have long been advocating these good sentiments as critical for positive work execution. At last, on enjoying the scope of making modifications in their positions and the resulting execution, job crafters, thus, are expected to find ways of returning and benefit from their associations (Petrou et al., 2015).

Consequently, the following assumption likewise seems to be reasonable:

H1: JC has a positive and significant relationship with JP.

JC and WE. Utilizing JD-R theory, we have contended and shown that JC can appear as proactively expanding job resources, expanding challenging job demands, or lessening hindering job demands. JC behaviors might appear as further developing job demands and resources and are positively identified with WE or commitment, work fulfillment, and different ratings of in-job work execution. Furthermore, ongoing scientific assessments of JC involvements in The Netherlands have shown that representatives can figure out how to craft their positions, resulting in more work and individual resources, elevated levels of work commitment, and improved performance. This implies that JC is

an effective bottom-up strategy to enhance work commitment since it expands the fit between the individual and the association (Bakker et al., 2012).

In recent decades, the role that representatives play in initiating change as a bottom-up process has acquired increasing attention (Chen et al., 2014; Petrou & Demerouti, 2018). In brief, the hypothesis recommends that job resources are positively identified with work commitment; challenging job demands can reinforce the positive connection between job resources and commitment; reducing hindering job demands can strengthen the positive connection between job resources and commitment; work commitment is positively identified with execution; representatives can utilize JC to expand their degrees of work commitment (Demerouti, 2014). Therefore, the following assumption additionally seems to be reasonable:

H2: JC has a positive and significant relationship with WE.

WE and JP. WE/commitment has been identified with numerous positive results both for the singular worker and for the association; work commitment has even in some cases been identified with better psychosomatic and physical wellbeing and ultimately influences the work execution of representative (Xanthopoulou & Bakker, 2009; Bakker et al., 2011). One reason why work commitment is such a well-known idea is that it is an excellent indicator of significant worker, individual and organizational results. In view of their solid commitment to and focus on their work activities, committed workers show better JP (Demerouti et al., 2010).

Prior literature has shown that representatives who are not locked in with their work have low work execution. Work commitment can be a sensitive indicator of JP since people with a significant degree of energy, assimilation, and devotion had found to have positive JP (Rich et al., 2010). At the point when a representative is committed, they serve clients better which builds their JP and thus offers more to the association's continuous benefit (Crawford et al., 2010). Subsequently, the accompanying assumption likewise seems to be reasonable:

H3: WE have a positive and significant relationship with JP.

WE as a Mediator between JC and JP. JC impacts the work commitment of representatives that, in turn, is identified with the work execution of representatives. In such conditions, work commitment turns out to be both reliant and free factors between JC and JP of representatives. Furthermore, JC is likewise assumed as an immediate indicator of the work execution of IT sector representatives. In such circumstances, there appears an ample scope for testing the mediation effects of WE, an expected intermediating factor in the connections.

Therefore, the objective of this study was to grow the extent of research by adding work commitment as an arbiter between the relationship of JC and work commitment. Thus, the accompanying assumption also seems to be reasonable:

H4: WE significantly mediate the association of JC and JP.

3. METHODOLOGY

This research is quantitative, and its purpose is hypothesis testing as this research tests assumptions regarding a population parameter that is employees of software houses in Pakistan. Emphasis on measurement and analysis of the correlation between variables

(JC and JP) within a framework that is logical, deterministic, and reductionist (Hoskins & Stoltz, 2005), based on prior theories which in this case is job demands-resources theory. This study is cross-sectional and aims at the individual unit of analysis.

Data Collection. Pre-structured standardized instrument (questionnaire) was used to collect data. All the employees working in software houses in Pakistan comprised the population of this study. From the whole IT sector of Pakistan four software houses are selected as samples for this study and the google form questionnaire link is shared with 350 randomly selected employees of software houses. Notably, those software houses were selected for the data collection whose turnover was highest. These software houses are part of IT sector since they focus on selling IT related services such as website creation, application development and other technological related tasks.

According to the Minimum R-squared Method, the minimum sample size should be 110 (Kock & Hadaya, 2016). Furthermore, to calculate sample size G Power software (Erdfelder et al., 2009) is also used, it calculates a sample size of 98. Although 98 was the required sample size in order to achieve the statistical power of 0.80 in this research, the sample size is set to 350 as the larger the sample size, the better will be the results accuracy.

Data Collection Strategy & Response Rate. This study will use a simple random sampling technique which is a type of probability sampling. For the purpose of data collection, a cross-sectional survey design was adopted and Google forms sharing survey was carried out. Google form questionnaires were shared with 350 IT sector employees from which 300 were returned back, the response rate was 86% which was sufficient for the analysis of data. For sake of distribution of questionnaires, Google form link was provided to those participants who were randomly selected from the sampling frame.

Research Instrument. Accordingly, the concerned questionnaire comprises two parts, the first part is demographics (Organization Name, Gender, Age, Highest level of Education, Job Status, Nature of Employment and Job Experience) and the second part is for JC, WE and JP respectively. JC questionnaires contain total 21 items, developed by Tims, Bakker & Derks (2011). Cronbach's alpha (internal reliability) of each dimension of scale is as: increasing structural job resources have Cronbach's alpha value of 0.82, increasing social job resources have Cronbach's alpha value of 0.77, increasing challenging job demand have Cronbach's alpha value of 0.75 and decreasing hindering job demands have Cronbach's alpha value of 0.79.

WE questionnaire contain a total of three items with dimensions vigor, dedication, and absorption, developed by Schaufeli et al., (2017). Cronbach's alpha (internal reliability) of the scale is 0.95. JP questionnaire contains total of 11 items from which 5 are for task performance and 6 are for contextual performance. Task performance, in this study, was measured with a scale developed by Goodman & Svyantek, (1999). Contextual performance is measured by a self-reported six-item uni-factorial citizenship performance scale developed by Poropat and Jones (2009). Cronbach's alpha (internal reliability) of the JP scale is 0.78. All items were measured with an adopted 5-point Likert scale.

4. FINDINGS AND DISCUSSION

Demographic Analysis. IBM SPSS Statistics version 20 (IBM, 2011) software is used to analyze the demographics of the study, and frequencies in the percentage of each demographic characteristic of software houses employees are shown in below Table 2. As this study focus on employees of software houses following categories of employees are taken under study that included Software Developer, Project Manager, Database Administrator, Quality Assurance Engineer, and Business Analyst. Table 2 shows that middle level managers were on the highest side i.e. 57%. It is seen that level of engagement and job crafting changes with the increase or decrease of the cadre (Tan, 2022). Therefore, highest number falling in the middle level manager shows that this factor might not disturb the overall effects of the study. Another worth mentioning point is that 62% of the employees were contractual since less number of employees gets permanent in software houses due to the volatile nature of the job.

TABLE 2. Demographic Characteristics of the sample under study

Demographics					
Gender	Male 72%	Female 28%			Total 300
Age	21-30 63%	31-40 23%	41-50 9%	Above 50 (Years) 5%	300
Highest Level of Education	Matriculation 5%	Intermediate 10%	Bachelor's 49%	Master's 25%	300
	MS/MPhil 10%	PHD 1%			
Job Status	Top Management 19%	Middle Management 57%	Lower Management 13%		300
	Non Managerial 11%				
Nature of Employment	Permanent 24%	Contractual 62%	Temporary 14%		300
Job Experience	1-5 54%	6-10 22%	11-15 14%	16-20 7%	21-25 (Years) 3%	300
Note: Compiled by authors					

Assessment of Measurement Model. The better way to report PLS-SEM analysis is by using two stage approach (Vinzi et al., 2010). In the first stage, the focus is on the outcome of the scaling or outer model also known as the measurement model, and in the second stage focus is on the inner model or structural model. In the first stage, the measurement model should be assessed with respect to the variable's reliability and validity.

Firstly, internal reliability is checked, there is a certain criterion to assess internal consistency such as Cronbach's alphas (Cronbach, 1951; Nunnaly, 1978; Santos, 1999), this approach estimates reliability based on inter correlation between indicators, whereas PLS prioritizes indicators as per their reliability which results more in composite

reliability, therefore it is recommended to use composite reliability while assessing reliability. It does not matter which specific reliability coefficient is used, an internal consistency reliability value above 0.7 in the initial stages of research and values above 0.8 or 0.9 in lateral stages of research are considered acceptable, while a value below 0.6 shows a lack of reliability (Cronbach, 1951; Nunnaly, 1978; Santos, 1999). It is recommended to eliminate the values of the outer loading below 0.4 from the measurement model. It should be noted that one should be very cautious while eliminating indicators as if the indictors' low reliability gets eliminated it should result in the increase of composite reliability, then and only then it is justified to eliminate indicators with lower loadings (Henseler et al., 2009).

For this study collected data is analyzed using Smart-PLS Version 3.0 software (Ringle et al., 2015). The reliability is tested in the measurement model (Figure 1).

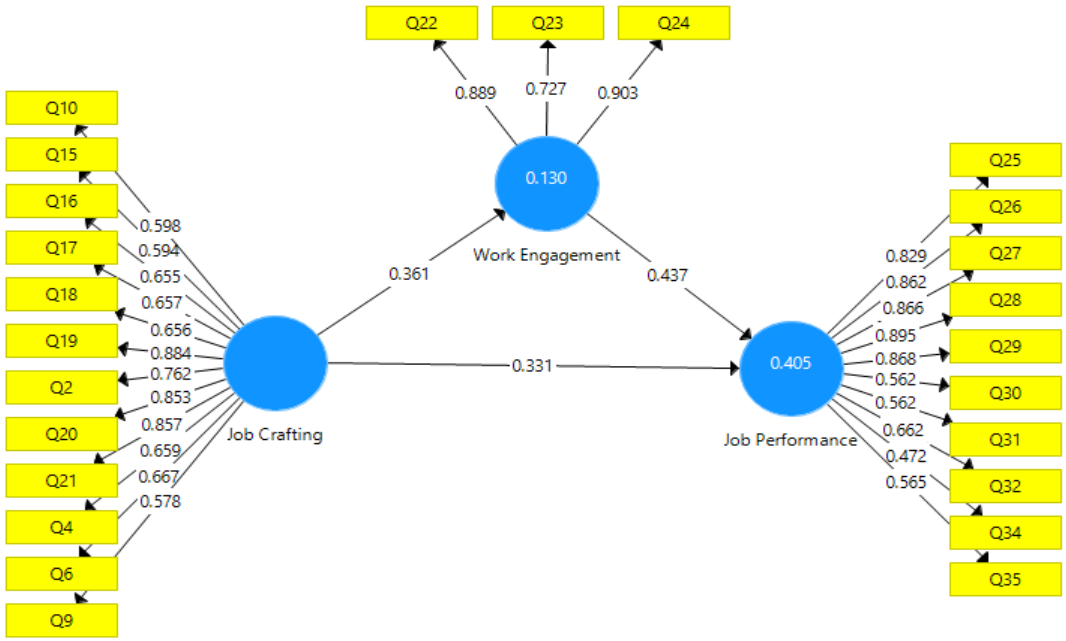

FIGURE 1. PLS-Measurement Model Output

Source: Compiled by the author using the PLC Algorithm

In this research, reliability is assessed through composite reliability for all constructs as JC, WE and JP are found to be at par or above the threshold or standard values. Threshold values for reliability should be equal to or greater than 0.7 at the initial stage of data analysis (Cronbach, 1951; Nunnaly, 1978; Santos, 1999) which can be seen in table 3. Validity can also be evaluated through convergent validity and discriminant validity. Convergent validity signifies that indicators represent one and same construct, Fornell & Larcker (l98l) recommended using Average Variance extracted (AVE) for analyzing convergent validity, and value of a minimum of 0.5 shows sufficient convergent validity. Figure 1 presents the measurement model as shown above.

TABLE 3. Demographic characteristics of a sample under study

Characteristics	Cronbach's Alpha	Composite Reliability (C.R)	Average Variance Extracted (A.V.E)
JC	0.909	0.922	0.503
JP	0.894	0.916	0.535
WE	0.792	0.880	0.711
Note: Compiled by authors			

Composite reliability is presented in Figure 2.

FIGURE 2. Composite Reliability
Note: Compiled by the author

Discriminant Validity. Discriminant validity can be evaluated by examining the cross-loadings of the indicators it is suggested that the outer loading of an indicator with its own construct should be more than all of its loadings with other constructs. If the loadings of an indicator with its own construct are less than loadings with other constructs, it represents a discriminant validity problem. Cross-loading criteria to assess discriminant validity are considered liberal criteria to establish discriminant validity (Hair et al., 2011). Following are the cross-loadings of constructs and result in a summary of the reflective measurement model used in this study as shown in Table 4.

TABLE 4. Cross Loadings

	Job Crafting	Job Performance	Work Engagement
1	2	3	4
Q10	0.598	0.267	0.194
Q15	0.594	0.3	0.298

1	2	3	4
Q16	0.655	0.222	0.217
Q17	0.657	0.22	0.199
Q18	0.656	0.23	0.227
Q19	0.884	0.419	0.268
Q2	0.762	0.402	0.241
Q20	0.853	0.413	0.315
Q21	0.857	0.437	0.321
Q22	0.262	0.46	0.889
Q23	0.384	0.474	0.727
Q24	0.243	0.456	0.903
Q25	0.402	0.829	0.452
Q26	0.355	0.862	0.463
Q27	0.383	0.866	0.43
Q28	0.388	0.895	0.411
Q29	0.365	0.868	0.393
Q30	0.301	0.562	0.385
Q31	0.325	0.562	0.391
Q32	0.341	0.662	0.384
Q34	0.301	0.472	0.373
Q35	0.367	0.565	0.329
Q4	0.659	0.423	0.229
Q6	0.667	0.322	0.215
Q9	0.578	0.355	0.292
Note: Q2 to Q21 belongs to JC, Q22, 23, 24 belongs to work engagement and Q25 to Q35 belongs to job performance.			

Table 5 shows the discriminant validity exists in the model.

TABLE 5. Result Summary of Reflective Measurement Model

	Composite Reliability (C.R)	**Average Variance Extracted (A.V.E)**	**Discriminant Validity**
JC	0.922	0.503	Valid
JP	0.916	0.535	Valid
WE	0.880	0.711	Valid
Note: Compiled by authors			

Assessment of Structural Model. As the outer model has been assessed with respect to validity and reliability next step is the evaluation of the inner path model that is called a structural model. A structural model has only one direction of the relationship and does not contain a direction of loop feedback (Latan & Ramli, 2013). The structural model for this study consists of an independent variable i.e. JC, one dependent variable i.e. JP for direct model estimation, and taking WE as a mediator for mediation analysis.

Estimates for the structural model are obtained by running the PLS-SEM algorithm which gives path coefficients; these path coefficients represent the hypothetical relationships between constructs. The standardized values of path coefficients range from -l to +1, wherein values closer to +1 represent strong positive relationships and values closer to -1 represents strong negative relationship values closer to +1/-l considered as statistically significant relationships are checked by P values. Whereas, a value closer to '0' indicates a weak relationship (Tenenhaus et al., 2005; Kock, 2015).

In order to assess the significance of path coefficients the bootstrapping procedure is performed, as the significance of relationships depends on the standard error. Standard error leads to the calculation of empirical t-values, it allows examining the significance of path coefficients as if t-va1ues are greater than the critical value, and we infer that the coefficient is significant at a certain error probability called as the significance level. Commonly used critical values for two-tailed tests are 1.65 (significance level= l0%), 1.96 (significance level = 5%), and 2.57 (Significance level = 1 %) (Hair et al., 2011). For the purpose of this study values of path coefficient have been taken into account for testing relationships and for the significance of relationships t-va1ues > 2.57 at significance level 1% (< 0.01) have been considered and the results of path coefficients of direct relationships as hypothesized are as under:

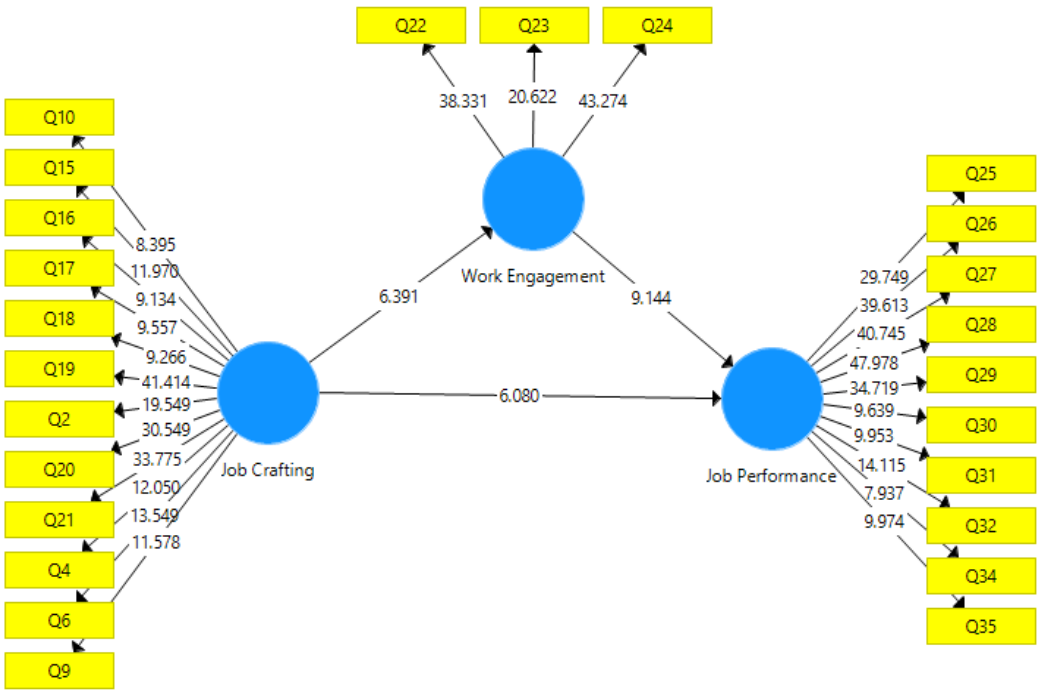

FIGURE 3. PLS-Structural Model Output (Using PLS Bootstrapping)
Note: Compiled by the author

Table 6 shows that there exist direct significant relationship between JC and JP. It can also be seen that there exist direct significant relationship between JC and WE. In addition, results reveal that direct significant positive relationship exists between WE and JP.

TABLE 6. Path Coefficients Results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P-Values	Supported/Non-supported
H1	0.331	0.335	0.053	6.199	0.000	Supported
H2	0.361	0.366	0.058	6.226	0.000	Supported
H3	0.437	0.436	0.049	8.973	0.000	Supported
Note: Compiled by the author						

Mediation Analysis. The main attribute of mediation is intervening third variable that is involved in it. In relation of independent variable i.e. JC and dependent variable i.e. JP, mediator i.e. WE played a role of intermediary variable. As per Baron & Kenny's process of mediation, when hypothesis of mediation is formulated, the consideration is that how an intervening variable affect association of independent and dependent variable.

In modern era, relationship between two variables is step by step procedure of Baron and Kenny's has by challenged by many researchers like Shrout & Bolger (2002), Preacher & Hayes (2004), Preacher & Hayes (2008), and Zhao et al., (2010). They have reconsidered the method of Baron & Kenny. According to Preacher & Hayes, (2008), mediation here is applied through bootstrapping, by taking resampling of 5000, in 2 steps:

In first step, direct mediation is judged through path coefficients, value of T statistics should be greater than 2.57 and value of P should be less than 0.01. As shown in table 4.4 all hypotheses for direct relations are supporting this criterion which means there exists direct relationship between independent and dependent variable. In second step, indirect effect is computed and table 4.5 is showing that partial mediation exists for WE in the relationship between JC and JP.

TABLE 7. Indirect Effect Results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T-Statistics (O/STDEV)	P-value	Supported/ Non-supported	Mediation
H4	0.158	0.160	0.032	4.870	0.000	Supported	Competitive Partial Mediation
Note: Compiled by the author							

Table 7 shows that that there exists partial mediation of WE between JC and JP of IT sector employees since p-value=0.000 which is significant.

Table 8 shows that JC of employee's significantly affects JP of the employees, ensuring a positive role of WE. In crux, the more the employees involved in JC, the more

adaptable they become with respect to positive JP and this effect is better explained if we introduce WE as a mediator because JC itself means employees are more concerned and engaged in their jobs which leads to improved JP eventually.

TABLE 8. Total Effect Results

Hypothesis	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P-Values	Supported/ Non-supported
H1	0.489	0.493	0.055	8.931	0.000	Supported
H2	0.361	0.365	0.058	6.255	0.000	Supported
H3	0.437	0.436	0.049	8.911	0.000	Supported
Note: Compiled by the author						

Coefficient of determination is one of the most essential criterion for assessment of structural model, i.e. R square of the dependent variables (Sinkovics et al., 2009). R square values of 0.75, 0.50 and 0.25 for dependent variables can as a rule of thumb describe substantial, moderated and weak (Hair et al., 2011). R square is used to measure predictive accuracy of the Structural Model. For this study two endogenous latent variable such as WE has R square of 0.130 and JP has R square value of 0.405 as shown in table 9 and figure 4 and 5.

TABLE 9. R Square and Adjusted R Square

	R Square	R Square Adjusted
WE	0.130 (weak)	0.127
JP	0.405 (moderate)	0.401
Note: Compiled by the author		

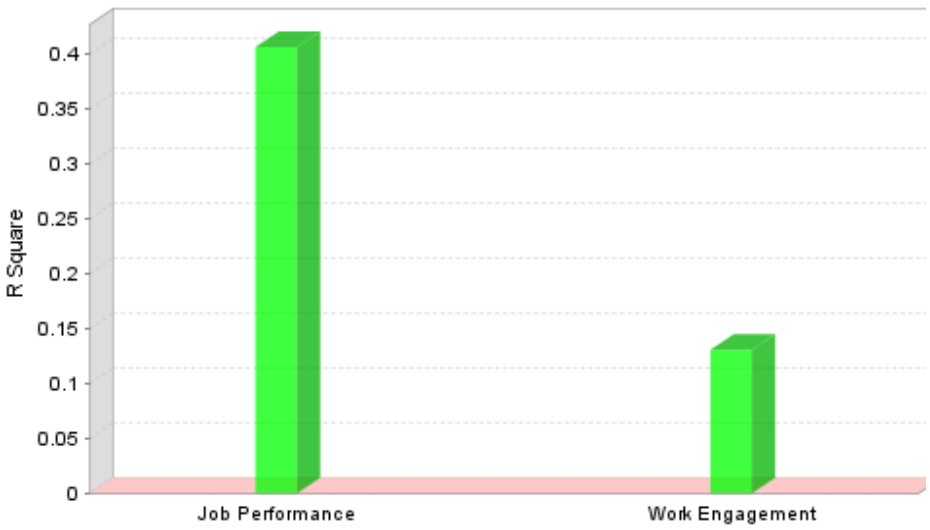

FIGURE 4. R Square

Note: Compiled by the author

Effect Size (f Square). Apart from evaluating the R square values of all dependent variables, the effect size f square in structural model should also be measured; f square values of 0.02, 0.15 and 0.35 represent small, medium and large effect size of dependent variable (Hair et al., 2011).

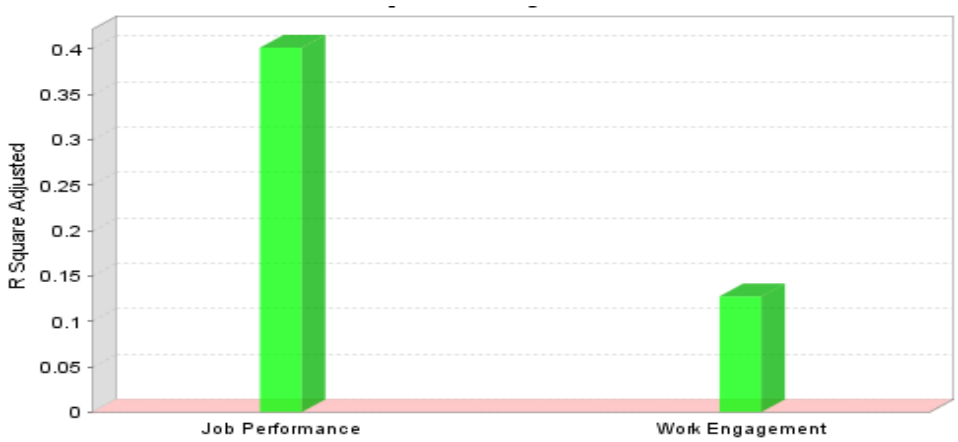

FIGURE 5. R Square Adjusted
Note: Compiled by the author

Table 10 exhibits the corresponding effect size of independent variable on dependent variable, where less than 0.02 have no effect, 0.02 to 0.15 have small effect and values greater than 0.15 to 0.34 have medium effect and 0.35 and above have large effect size. Further t-values of respective path coefficients have been exhibited which show significance and non-significance of relationship, the effect size (f square) has been cross validated with t-values and here effect size is ensuring significance of relationship. Thus this has been cross validated the effect of independent variables on dependent variables

TABLE 10. Effect Size (f Square)

Hypothesis	f Square	Effect Size	t-value	Significance	Cross Validated
H1	0.161	Medium	6.199	Significant	Yes
H2	0.150	Small	6.226	Significant	Yes
H3	0.279	Medium	8.973	Significant	Yes
Note: Compiled by the author					

Structural models can also be assessed for prediction relevance and to assess model's capacity to predict. For said purpose the Stone-Geiseer's Q square measure is considered which can be measured through blind folding procedure. Blind folding procedure is just applied to dependent variables in reflective measurement model and the value of greater than Zero confirms predictive relevance. Values of 0.02, 0.15 and 0.35 have small, medium and large predictive relevance of a specific dependent variable (Sinkovics et al., 2009). Q square is assessed to measure predictive relevance of structural model. For this

study value of Q square for dependent variables i.e. WE has 0.078 (Small Predictive Relevance) and JP has 0.193 (Medium Predictive relevance), as shown in table 11.

TABLE 11. Q Square Predictive Relevance Construct Cross Validated Redundancy

	SSO	SSE	Q Square (1-SSE/SSO)
WE	900	829.404	0.078
JP	3000	2422.095	0.193
Note: Compiled by the author			

Table 12 summarizes the details of all the hypotheses and shows that all the hypotheses are accepted.

TABLE 12. Summary for all Hypothesis Results

Hypothesis	Paths	Results
Hypothesis 1	JC → JP	Supported
Hypothesis 2	JC → WE	Supported
Hypothesis 3	WE → JP	Supported
Hypothesis 4	JC → WE → JP	Supported
Note: Compiled by the author		

5. CONCLUSIONS

JC is found to positively influence JP and WE, similarly, WE also showed a positive relation with JP. The mediating role of WE was tested through bootstrapping in Smart PLS 3. Results showed that partial mediation of WE exist in JC and JP relationship. Overall, this study has four hypotheses and all of these hypotheses HI, H2, H3, and H4 are accepted.

A significant pathway to improve JP is JC by increasing structural and social job resources, increasing challenging job demands, and decreasing hindering job demands. An organization that can figure out the means for increasing the presence of JC opportunities for employees will generate benefit for employees' WE and improve the JP of employees.

In order to help the employees in crafting their job, software houses must take appropriate steps to develop positive attributes in employees like WE. Employees who are vigorous, dedicated and are absorbed in their work are fond to be moving towards improving their performance at work which in turn leads to better organizational performance as well. This is a growing concern regarding the positive JC of employees in this critical environment. The issue can be properly addressed by successfully feeding positive attributes to employees like WE which is, resultantly beneficial for employees' JP.

Theoretical Implications. The result of this study adds to existing Organizational Behavior research in many ways. More concretely, the first strength of this study is related to the analytical and predictive (hypothesis testing) research on each element of JC (Tims et al., 2012). This study enhances current knowledge by investigating the

influence of JC on JP of employees. The second strength refers to the examination of critical outcomes of JC. These outcomes are improvement of JP of employees through engaged employees. Predicting the factors influencing JP of employees within the software houses is relevant and significant. The third strength refers to the underlying mechanism through which WE are linked to the aforementioned consequences (Wingerden et al., 2017). Overall, this study enhances the current knowledge base by gauging the mediation effect of WE in the relationship of JC and JP, by data analysis collected from software houses employees through google form questionnaires.

Practical Implications. The result of this study has certain practical implications for the quality of the workforce employed in software houses as results implicate that in order to gain engaged employees in software houses, management must train employees to have attributes of JC. Proper workshops can be conducted in this regard or having them to engage in JC learning activities can be a good option, so that they can craft their own jobs and, resultantly, employee performance improves. Secondly, the results clearly suggest that there is a need for establishing and maintaining an environment that support JC. JC is an important source of a positive environment where employees engage themselves in their work and have intentions to positively increase their JP. Therefore, the management of software houses should be committed to the philosophy of JC. Another implication of this study is that employees who are engaged with their work are better able to perform their work and give benefit to organization as compared to employees who are less engaged with their work (Bakker & Bal, 2010; Christian et al., 2011). Lastly, managers need to focus more on work engagement practices of the employees so that their performance can be increased. This is very important since software houses work in a volatile and fast environment and need swift response for better performance level.

Research Limitations & Future Research Directions. Nevertheless, findings of this study are fruitful for managerial implications yet there are certain limitations to this study. First and foremost limitation of this study is that the results this study cannot be generalized to other countries using the same research model may give substantially different results as this study involves the study of JC in Job Demand Resource perspective (JD-R). Second, due to logical reasoning, the target population included in this study was limited to employees of IT sector of Pakistan and specifically four software houses, the limited geographical population hinders the validity of the results. It is therefore directed here some future research on said topic to include more cities, to validate the results of our study in Pakistan. It is also recommended to potential researchers of the field to do some cross-country studies using this research model while taking countries' culture and attributes of employees as moderated and significant differences in results can elaborate the role of culture and attributes in improving JP. Additional research is needed to test further whether JC can be developed via the training model as well as to determine its impact on organizational performance.

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Original article

The Science Impact on Country's Socio-Economic Development

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Abstract

Studies that address the issues of statistical measurement, algorithms, and methods of analysis and assessment of the science impact on a country's socio-economic development are still poorly developed. The degree of research in this area, taking into account the Kazakh specifics, is extremely low. The aim of this study is to research the assessment methods of science impact on the country's social and economic development and conduct an appropriate assessment using the example of Kazakhstan. The conceptual framework of the methodology is the Impact Assessment Model which assesses the science impact on the development of the country through input (science development) and output (social and economic development) parameters. The information base includes the statistical data from the Bureau of National Statistics for the period from 2011 to 2020. The research results show that the assessment of the science impact can be performed at different levels, as well as different goals, objectives, technological trajectories, and economic results that countries strive to achieve. There are index and econometric methods, microeconomics, case studies, patent and bibliometric studies and surveys to assess the science impact. Each has its own advantages and disadvantages. Today the potential of Kazakhstani science has not yet been revealed and the results of scientific research are used not enough in solving applied problems of the social and economic development of Kazakhstan. The scientific results obtained in the research course can be applied in the activities of Kazakhstani Ministries and can be used in the educational process.

Keywords: Economics, Science, Technology, Society, Impact, R&D
SCSTI: 12.21.25
JEL Code: B41, O11, O33

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1. INTRODUCTION

The society's evolutionary development originates from scientific and technological progress (STP). There was an evolution of the economists' views on scientific, technical, and innovative activities along with the intensive scientific and technological progress in the XX century. The ideas about the impact of scientific and technological progress on economic growth were laid down herein by Solow (1956) and Swan T.W. (1956) where it was considered an exogenous factor. While the endogenous growth theory put forward the idea that STP is endogenous and is explained by the accumulation of knowledge through research, development and innovation (Romer's (1990) model, Schumpeter's (1934) innovation theory, Aghion-Howitt's (1992) model, Grossman-Helpman's (1994) model, etc.) and technology diffusion (Barro-Sala-iMartin's (1995) model, etc.).

Endogenous growth theories have shown that economic growth depends on investment in research and development. R&D investments by firms and public research organizations are essential elements in increasing new technologies, labor productivity, country competitiveness and economic growth within national innovation systems (Coccia, 2018). Besides, such processes contribute to increased production as new inventions and ideas are generated with various beneficial fall-outs. These fallouts may include increased productivity, the accumulation of new technologies and knowledge, improved quality of life, and the creation of new jobs that are expected to have a positive impact on the social and economic growth of the country. It should be noted that R&D affects the country's social and economic development in several ways: they contribute to an increase in the productivity level at the same level of costs for research and development potential; ensure economic growth through the production of new products with higher added value; enhance the competitiveness of the national economy at the international level; contribute to the formation of fundamentally creative technologies that contribute to an increase in the social and economic development level.

The development of the economy and changes in the development of society under the science impact, the growth of budgets for scientific programs, and competition for scientific leadership give rise to the problem of assessing the effectiveness of science and its impact on the country's social and economic development. An objective study of the science impact on the country's social and economic development in modern conditions will make it possible to correctly substantiate the key directions in the development of scenarios, recommendations, and mechanisms to enhance the science's influence and increase its effectiveness for economic growth and the formation of a knowledge-based economy.

But universal parameters intended to assess the quantitative relationship between R&D expenditures and the required economic growth have not yet been determined. Many assessment methods and models differ from each other in the method of calculation, structure, and the ratio of quantitative and qualitative parameters used. Based on the foregoing, this study aims to research the assessment methods of science impact on the country's social and economic development and conduct an appropriate assessment using the example of Kazakhstan. It is assumed that a number of tasks will be solved to achieve this goal, i.e, the following algorithm to conduct research will be applied: a literature review of methods intended to assess the science impact on socio-

economic development (Section 2), justification of the optimal methodology for analysis (Section 3), analysis, collection and processing of statistical data on science impact on the socio-economic development of Kazakhstan (Section 4) with the presentation of relevant conclusions (Section 5).

2. LITERATURE REVIEW

Numerous attempts to identify the relationship between parameters such as return on investment and productivity have yielded positive but widely diverging results (Tsipouri, 2001). Assessment of the science impact is challenging for several reasons: first, a long period of time can elapse between a scientific hypothesis, experiment, discovery, scientific theory and its application in society; secondly, the science influence can be broad and difficult to measure for different branches of science; third, the science impact can be indirect, non-linear and cumulative.

It is possible to assess the science impact at different levels:

- depending on the subject of assessment: individual (individual scientist), collective (team of authors, research group), institutional (scientific organization, government body and development institute in the area of R&D);
- depending on the object of assessment: mini- (scientific article), micro- (scientific project, scientific program), meso- (a separate branch of science), macro- (science of the country and its regions), global (world science).

Traditionally, the scientific impact is assessed at the level of the scientific system as a whole, individual organizations, and programs. Assessing the science impact at the country level is possible in the sectoral and regional context.

The impact is inherently more difficult to measure than direct R&D results, so it should be borne in mind that the metric is a parameter, not an absolute measure of impact. There are four approaches to the selection of parameters (Bhalla & Fluitman, 1985): input parameters and output parameters; use parameters and impact parameters; quantitative and qualitative parameters (objective and subjective parameters); micro and macro level parameters. Any parameters chosen to track the impact should be as accurate as possible to show the specifics of the research object. Impact assessment is closely related to the availability of data, both those that describe the scale and direction of scientific activity, and the economic or social factors on which it appears. At the same time, the data must comply with the following principles: openness, accessibility, transparency and reliability of data; comparability of data and results over time for correct comparisons; maximum relevance of the data, i.e. data related to the characteristics of the development of science, economic and social development.

When a method is chosen to assess the science impact on social and economic development, the analysis period should also be taken into account. Thus, some R&D may have an immediate impact, while others may have a certain time lag of impact. Thus, the impact on the reputation of the country or the attraction of talented researchers and professionals in other fields can materialize faster than the introduction of developed new technologies. A registered patent may not have an immediate impact until a product/process is developed from it that can then generate income and create jobs. It should be noted that at least a three-year waiting period is required because it takes some

minimum time for the technology or technological infrastructure to be disseminated widely by the R&D agency (Tassey, 2003).

Today, various methods are used in world practice to assess the science impact on the country's social and economic development (GRC, 2019; Alibekova et al., 2020), i.e.: econometric, patent, index, case study (case study), survey (survey), bibliometrics and financial analysis.

In economic research, four main criteria are used to analyze the structure and measure the contribution of industries, including science and industries of the knowledge economy (Martin & Irvine, 1983):

1) labor one, based on the analysis of changes in employment in sectors of the economy, including in the knowledge-intensive sector (the number of scientists per 1,000,000 persons, etc.);

2) economic one, focusing on the study of the contribution of knowledge-intensive industries in value terms to the creation of GDP (the share of R&D expenses, etc.);

3) technological one, taking into account the country's ability to create technological innovations (the number of patent applications under the Patent Cooperation Treaty (PCT), etc.);

4) spatial one, implying a measurement of the level of technological globalization (index of economic complexity, etc.).

Econometric estimation methods using exogenous growth models in various modifications are widely practiced. Without dwelling on the classic works of the founders of the endogenous growth theory, in particular, works on the study of the R&D impact on economic growth, let us consider modern research. So, under the predictive model, Todosiychuk A.V. (2005) multivariate statistical analysis showed that there is a close relationship between GDP and investment in R&D; an increase in investment in R&D by 1% increases GDP by 0.14%. Dikusar A.I. and R. Kuzhba (2015) based on a quantitative analysis of the relationship between the social and economic development level of society (assessed by HDI - Human development index) and the level of its scientific development (assessed by scientometric parameters based on the information model of science), revealed the presence of a positive feedback between them, both for the EU countries and for the countries of the Commonwealth of Independent States (CIS). At the same time, the EU countries have not only the highest values of these indices but also a stronger relationship between them. The features of the modern development of science in the studied groups of countries indicate positive trends in the mutual science influence and the social and economic development level in the EU countries and negative trends (a decrease in the contribution to the world information process) in the CIS countries.

One of the assessment methods is also the construction of an integral index. So, Pilipenko G.M., Naumenko N.Yu. and Fedorova N.Є. (2018) built an integral development index that includes 5 sub-indices describing the economic, environmental, political and legal, social and socio-cultural subsystems, as well as the integral index of science to assess the science impact on the process of social and economic development. Using the sample correlation coefficient that characterizes the degree of linear correlation, they quantified the relationship between the two indices in different groups of countries (highly developed, middle-income, underdeveloped and post-Soviet).

The foundations intended to analyze the science impact are also laid down in patent research (GRC, 2019). There are certain features of assessment of the science impact on the country's social and economic development in patent research. Thus, patents may not always be good parameters to assess impact, since there is no international patent office, the protection of patents remains with national jurisdictions. The United States and Europe have defined the patentability of new life forms differently, with the result that patent registries in these jurisdictions will differ, even if the innovation results are the same. The filing fees, including transaction costs, at the European Patent Office are much higher than in the United States, and this partly explains why the number of patents filed in Europe is lower than in the United States. Besides, half of US patent applications are filed by residents of countries other than the United States. Therefore, an attempt to assess and compare the science contribution and innovation to the social and economic development of countries based on the analysis of patents does not always lead to results that correspond to reality (Steil et al., 2002).

Econometric models, patent research and integral indices are used mainly to assess the science impact on social and economic development at the macro level. The OECD proposes to be guided by three parameters to assess the success of research activities in a particular country: patent statistics, technological balance of payments, and trade statistics in sectors that are active in terms of research. While each of these parameters is not entirely perfect in isolation, together, they can shed light on the real state of affairs in terms of specific R&D results in a given country.

Since the 1980s, the OECD countries have been gradually developing a fundamentally new management system for scientific organizations that has determined the development of new methods intended to assess the science impact. Under the new system - "performance-based funding system" - scientific organizations are financed by assessment of the quality of their work, for which the interested parties conduct a special assessment of the scientists' work. As a rule, the assessment initiator is the main donor from the state. In the Netherlands, for example, it is the Ministry of Education and Science, in Italy - the Ministry of Universities, Scientific and Technological Research, in the UK - there are four councils intended to finance education. R&D funding organizations when they work with a portfolio of grants, in the short term perform research to assess the science impact. Basically, this assessment is performed at the project level: preliminary analysis (ex-ante impact analysis) or during/after the implementation of the initiative (ex-post impact assessment). Either various scientometric methods, or more traditional peer review, or a combination of both are used as an assessment tool (OECD, 2020).

Microeconomic modeling is an ideal approach to assess parameters of the science impact, since the relationships between inputs, outputs and outputs are well defined. For example, case studies (case studies), surveys, financial analysis based on research projects and programs. Case analysis is best suited for situations where the use of quantitative assessments is unlikely, or when quantitative analysis alone will not provide a balanced view of the value being created. The case-based approach includes a detailed description of how the impact of research findings on economic policy is created through interviews with stakeholders. Case analysis results tend to be qualitative in nature but can

also be quantitative. The survey of project researchers should include a question about potential users of the research results that should then be interviewed.

One of the methods of financial analysis and assessment of the science impact at the project level is the assessment of the return rate on R&D results, based on the calculation of three parameters, i.e.: net present value, the ratio of benefits and costs, and the internal return rate. Each of these parameters provides a solution to a specific problem: determination of the absolute value of the economic benefits produced, comparison of projects, measurement of the return on investment over a period of time, respectively. For example when the impact of a scientific project is assessed the calculation of the return on investment in research is important (Passani et al., 2014), this is a method from corporate finance. It is calculated as a weighted sum of three indices:

1) internal return on investment, showing the financial sustainability of the project and measuring the financial return for the consortium partners;

2) external return on investment that determines the net benefits that the project brings to society as a whole;

3) the social impact index, covers all impacts caused by a scientific project that cannot be measured in monetary terms and can be easily converted into economic/financial values.

The science impact can be assessed not only at the level of scientific projects and programs but also at the level of organizations, in particular, research centers. When the value generated by a research center is measured, both the results it produces and the impact it can have on policymaking should be considered. It is important to keep track of research results, as any public fund administrator needs to know what they are purchasing for the funds and whether the value for money is reasonable. The number of users of research results also provides useful information about the quality and relevance of what the research produces.

Evaluation of institutional and individual research results is an important component of evaluation of the effectiveness and impact of research. However, today there are no internationally recognized standards that enable an objective assessment of the scientific results of individual researchers (L'Académie des sciences de l'Institut de France, 2011). It should also be borne in mind that the volume of scientific research has increased significantly in recent years. With an abundance of scientific information, the use of quantitative bibliometric strategies enables one to work to weed out significant work, assess their effectiveness, and find the basic structure of the relevant field. Bibliometrics use mainly three methods: the subjective methodology of organized literature, meta-analysis using a quantitative approach, and scientific mapping to structure and improve scientific disciplines. Within the framework of bibliometrics, the published work is evaluated by the influence (impact factor) of the magazine, the total number of citations, the average number of citations per article and per author, the average number of citations per year, the number of authors per article, Hirsch index, etc. These metrics are used to assess individual, team and institutional research. There are also alternative metrics (altmetrics): the number of downloads of material on social networks, views, comments, quotes, etc. They can be calculated in publicly available scientometric resources, databases and academic social networks (Google Scholar, ResearchGate, Mendeley,

etc.). Altmetrics enable to measure the level of attention to the results of scientific work, their distribution (reposts in social networks, discussions on blogs and forums, mention in the news) and the impact on society (the use of scientific publications in expert opinions and government documents) (Majeed & Ainin, 2020).

Thus, there are various methods and models intended to assess and to analyze the science impact on the country's social and economic development, each of which has its own disadvantages and advantages (Table 1).

TABLE 1. Advantages and disadvantages of existing models and methods intended to assess the science impact on the country's social and economic development

No.	Method/ Model	Advantage	Disadvantage
1	2	3	4
1	Econometric	Statistical analysis of large databases, presenting an overall picture of statistical patterns, focusing on scale models (macroeconomic level), showing economic benefits and fall-outs by assessment of the influence of some factors on others	Methodological limitations, simplified assumptions about reality, the impossibility to assess the impact of all factors on the process of technical development, innovation and commercialization
2	Case study	The possibility of detailed analysis, a better understanding of the use of research results funded from private and public references, with specific examples	Narrow picture of reality, high costs of money and time to conduct an assessment, difficulty in generalization of research results, focus on the best and most successful projects
3	Survey	The possibility of detailed analysis, the possibility to identify new facts, taking into account the opinions of different stakeholders, information from persons directly related to the country's science and social and economic development	Subjectivity of assessments, limited knowledge of technology and research, conflict of interest, favoritism, superficial expertise, high costs of money and time to conduct a survey
4	Bibliometrics	Ease of assessment, fast assessment speed, availability and open access to data for assessment, availability of automated calculation programs	Potential unreliability of citation rates, susceptibility to manipulation, a measure of the use of an article rather than quality or significance; dependence of the citation rate of an article not only on its significance but also on the location of the author, prestige, language and accessibility of the published magazine
5	Patent	Availability and openness of data	Differences in patent registries in different jurisdictions, different filing fees and transaction costs in different patent offices

1	2	3	4
6	Index	Consideration of many different factors, the ability to determine the level of influence due to the presence of a threshold scale	Low level of information content
7	Financial analysis	Determination of financial benefits	Low level of data transparency, impossibility of using at the macro level
Note: Compiled by the authors based on references (Martin, 2007; Salter & Martin, 2001; Thorne, 1977; Seglen, 1992; Martin, 1996; Martin & Irvine, 1983)			

A review of the theory and methodology of issues of the science impact on the country's social and economic development indicates the absence of a universal mechanism, a single method or model to assess the scientific impact. This is due to the fact that the assessment of the scientific impact can be performed at different levels, as well as different goals, objectives, technological trajectories, and economic results that countries strive to achieve. None of the parameters or assessment methods can take into account the diversity and complexity of the technological outputs of R&D programs; accurately describe the processes by which the influence itself occurs; estimate the time lag of the influence; to cover the final economic and social results in full. There are index and econometric methods, microeconomics, case studies, patent and bibliometric studies, and surveys to assess the science impact. Each has its own advantages and disadvantages. In general, economic research uses labor, economic, technological and spatial criteria to analyze the structure and measure the contribution of industries, including those of the knowledge economy. Despite the differences in the methods used, there are certain methodological elements that are common to all studies: the definition of criteria to select assessment objects; determination of the time period for the assessment; determination of a common analytical approach; determination of an analytical framework for retrospective impact assessment; determination of the scale and scope of research within the chosen analytical approach; determination and selection of metrics/parameters; selection of a method intended to assess metrics; integration of metrics into the analysis framework.

3. METHODOLOGY

The research question of this study was the following: how does science impact on Kazakhstan's social and economic development?

The hypothesis of this study is that there is a positive relationship between Kazakhstan's science and social and economic development, but science is not the main factor in socio-economic development in Kazakhstan

The descriptive survey research design was adopted as the study guide to assess the science impact on Kazakhstan's socio-economic development. The conceptual framework of the methodology intended to assess the scientific impact proposed by the authors is the Impact Assessment Model that assesses the science impact on the development of the country through input (resources) and output parameters (result, effect, impact), where the parameters of science development are input metrics,

parameters of social and economic development are outcome and impact metrics (Figure 1).

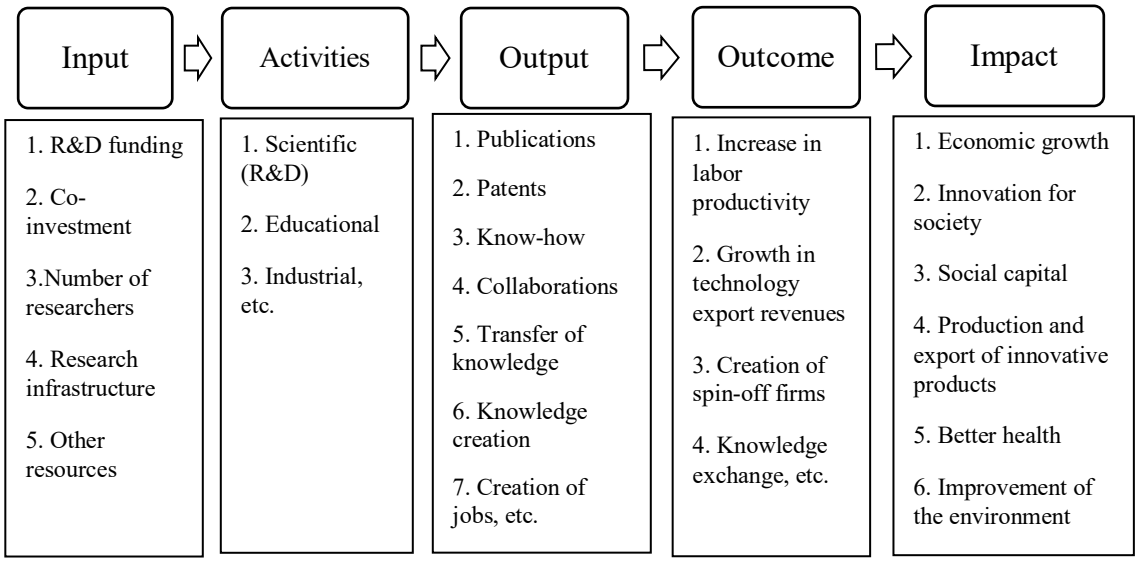

FIGURE 1. Model intended to assess the science impact on the development of the country

Source: OECD (2019)

The author's methodology intended to assess the science impact on the country's social and economic development is proposed with a mechanism that includes the following stages of work:

1) analysis of the absolute and specific parameters for the development of science in the country;

2) analysis of absolute and specific parameters of the country's social and economic development;

3) analysis of derived parameters of direct and indirect science influence on the country's social and economic development;

4) generalization of the results obtained.

This mechanism enables all interested parties (executors, authorized body, research organizations and development institutes) to receive information with varying degrees of detail. The four-stage mechanism makes it possible to comprehensively assess the factors of science impact and obtain structured information on the parameters of science and social and economic development and their connection. The methodology proposed by the authors contains the following general methodological elements:

1) Determination of criteria for selection of assessment objects. The assessment objects are the development parameters of the country's science and social and economic development for a certain period of time.

2) Determination of the time period for the assessment. Proceeding from the fact that the ideal time to conduct a study of economic impact is 3-10 years after a significant

impact on the market has begun, the author's methodology proposes to consider a period of 10 years (from 2011 to 2020) that will enable studying the dynamics of changes in the science impact on social and economic development.

3) Determination of the general analytical approach. The general analytical approach is expressed in the mechanism to assess the science impact on the country's social and economic development that includes four stages of the work specified above.

4) Define an analytical framework for retrospective impact assessment. The analytical framework for a retrospective assessment of the science impact on the country's social and economic development will be based on the analysis of time series for the last 10 years preceding the assessment period.

5) Determination of the scale and scope of research within the chosen analytical approach. The methodology proposed by the authors is based on a quantitative study. The author's methodology intended to assess the science impact on the country's social and economic development includes a system of parameters covering quantitative parameters.

6) Definition and selection of metrics/parameters. In the context of the transition to a knowledge-based economy, a new system of parameters should be used to quantify the science impact on the country's social and economic development, based on a comparison of parameters characterizing its input and output, as well as its internal structure. The collection of quantitative data is performed by a desk method.

Parameters structured within the framework of the system meet national and international standards and meet the requirements to form parameter systems, such as relevance, reliability, adequacy, objectivity, unambiguity, sufficiency, formalization, etc. At the same time, the system of parameters for each of these subsystems was built by the authors taking into account the following principles:

- Openness, accessibility, and transparency of statistical materials. All used data are posted on the official website;
- Comparability of data and results over time. We used only those parameters that can be compared with each other that enable correct comparisons;
- Maximum relevance of parameters, taking into account the form factors of a knowledge-based economy. Only those parameters are applied that are relevant to the characteristics of the development of science, economic and social development.

7) Choice of a method intended to assess metrics (calculating parameters). In the methodology proposed by the authors, the system contains both main parameters, the values of which are formed during the collection process, and derived parameters (relative, specific, synthetic, etc.) determined on their basis. The main method is economic and statistical analysis.

The information base of the study included secondary data: statistical data from the Bureau of National Statistics of the Agency for Strategic Planning and Reforms, the National Bank, the National Institute of Intellectual Property of the Ministry of Justice of the Republic of Kazakhstan, The World Bank, the World Intellectual Property Organization, the United Nations Industrial Development Organization, as well as international indices of scientific and social and economic development (Competitiveness Index, Global Knowledge Index, Country & product complexity

rankings, etc.), materials of scientific and practical conferences, periodicals and Internet resources. Microsoft Excel program was used to process statistical data.

Thus, the methodology proposed by the authors to assess the science impact on the country's social and economic development is aimed to analyze science as a whole as a sector of the economy. It takes into account not only the impact on the economy but also on social development that has not been studied previously.

4. FINDINGS AND DISCUSSION

The development parameters of Kazakhstani science (Table 2) and social and economic (Table 3) development were analyzed for the period from 2011 to 2020.

TABLE 2. Parameters of the scientific development in the Republic of Kazakhstan, 2015-2020

Parameter	2015	2016	2017	2018	2019	2020
1	2	3	4	5	6	7
Number of applications for PCT patents, units	24	21	27	16	27	30
Gross R&D expenditures, million tenge	86,572.9	89,509.8	92,732.5	99,706.7	118,070.7	116,742.9
Internal R&D expenditures, million tenge	69,302.9	66,600.1	68,884.2	72,224.6	82,333.1	89,028.7
Number of organizations engaged in R&D, units	390	383	386	384	386	396
Number of researchers, thousand persons	18	17	17.205	17	17	18
Number of PhD students, thousand persons	2.219	2.71	3.603	6	6	N/A
Payments for the use of intellectual property, USD	149,088,505	126,873,670	117,050,999.3	167,710,230	141,320,590	146,183,995

1	2	3	4	5	6	7
Number of scientific and technical articles, units	1,171.06	1,601.18	1,958.82	2,367.46	N/A	N/A
Amount of R&D services provided, million tenge	104,332.0	114,491.6	118,575.0	118,083.1	130,434.5	108,291.3
R&D import volume, million USD	9.3	12.7	10.1	12.0	15.3	18.3
R&D export volume, million USD	5.6	6.3	5.7	5.5	7.0	21.3
Sub-index "Research, Development and Innovation" of the Global Knowledge Index	N/A	N/A	14	16	14.5	14.5
Note: Compiled by authors						

Under the sub-index "Research, Development and Innovation" of the Global Knowledge Index, Kazakhstan has a low level of scientific potential. For the period from 2011 to 2020 an increase in scientific potential was recorded due to a twofold increase in gross R&D expenditures and over 2.3 times in internal R&D expenditures, an increase in the number of researchers by 63.64% and PhD students by 4.5 times. At the same time, there is a decrease in the number of organizations performing R&D by 16 units, i.e. 3.89%. It should be noted the rapid growth of publications of Kazakhstani researchers, starting from 2016: the average annual growth rate for 2011-2018 amounted to 25.64%. This was largely influenced by the current state policy in the area of training scientific personnel, obtaining academic titles and degrees and changes in the requirements in the competition documentation for participation in competitions for scientific projects of grant and program-targeted funding. The average number of PCT patent applications filed is 22 that is very low. The amount of payments for the use of intellectual property for the period from 2011 to 2020 increased by 51.6 million USD and amounted to 146.2 million USD in 2020. The amount of R&D services provided for the period under review increased by 30.06%. Until 2020, Kazakhstan was practically a net importer of foreign R&D and technologies, there was a negative balance of payments under license agreements that indicates a lack of its own scientific potential to meet domestic needs for research and development. In 2020, the situation changed, R&D exports exceeded

imports. During this period, there is a tendency to reduce imports against the background of an increase in R&D exports, so the average annual growth rate of these parameters was -16.6% and + 4.29%.

Under the prosperity index in 2020, the economic development level in Kazakhstan was above average, while it was average in 2011. Positive dynamics of economic development can be traced in such parameters as GDP, GDP per capita, the volume of innovative products, investments in fixed assets, the volume of manufacturing products, labor productivity in industry and the volume of production (export) of ICT, the average annual growth rate of which for the period from 2011 to 2020 amounted to 9.61%, 8.25%, 21.94%, 9.37%, 10.67%, 4.11% and 4.28% (1.65%), respectively. At the same time, there is an annual decrease in the volume of foreign direct investment by an average of 4.19%.

The number of innovatively active enterprises increased by 2 622 units, i.e. 5.27 times. While the number of enterprises that created new technologies and equipment, decreased by 28 units, i.e. by 10.81% compared to 2013. However, the growth in the number of innovatively active enterprises did not contribute to a significant increase in the added value of medium and high-tech production that in 2011 amounted to 13%, and in 2018 - 14.51%. At the same time, there is a decrease in the volume of exports of high-tech goods and services, the maximum value of which was in 2012 (3,571.4 million USD), against the background of an increase in its share in the volume of exports of the manufacturing industry from 25.68% in 2011 to 29.78% in 2020. These changes are characterized by an increase in the parameters of the country's economic complexity and competitiveness, however, an increase in the intensity and competitiveness of the Republic's industry has not been noted. So, for the period from 2011 to 2020 the intensity index of industrialization and industrial competitiveness remained practically unchanged.

Under the social progress index in 2020, the social development level of Kazakhstan was high, while it was above average in 2011. The positive dynamics of social development can be traced in such parameters as the average per capita nominal cash income of the population and the average monthly nominal wage per employee, the average annual growth rate of which for the period from 2011 to 2020 amounted to 9.61% and 8.99%, respectively. Within the period from 2011 to 2017, there is a decrease in the poverty level from 5.5% to 2.6%, since 2018 this parameter has increased to 5.3% in 2020. The number of employed persons during the period under review increased by 430.4 thousand persons, the unemployment rate decreased 5.4% to 4.9%. Under the data of 2020, crime decreased by 21.29% compared to 2011, the peak of registered crimes occurred in 2015 and amounted to 386,718 units.

In the healthcare sector, the following trends are noted: from 2011 to 2019 the number of hospital beds decreased from 117.7 thousand. up to 96.3 thousand units However, in 2020 their number increased by 32.4% compared to 2019, amounting to 127.5 thousand units. The overall mortality rate fell between 2011 and 2019 from 8.72 to 7.19, however, in 2020, its growth is noted to 8.6. The same situation is observed in terms of maternal mortality: from 2011 to 2019 a decline from 17.4 to 13.4 and a sharp increase in 2020 to 36.5. This is also due to the current epidemiological situation in Kazakhstan and the measure. At the same time, there is an almost twofold decrease in infant mortality from 14.91 to 7.77. In the field of education, there is an increase in the number of students in

general education schools against the background of a decrease in the number of students in colleges and universities.

Analysis of the derived parameters of the direct and indirect science influence on the country's social and economic development. We analyzed the parameters of the direct and indirect science impact on the social and economic development of Kazakhstan (Table 4) that made it possible to determine the role of science and assess its contribution to the social and economic development of the Republic.

TABLE 4. Derived parameters to assess the science impact on the social and economic development of the Republic of Kazakhstan, 2015-2020

No.	Index	2015	2016	2017	2018	2019	2020
1	Share of domestic R&D expenses to GDP, %	0.17	0.14	0.13	0.12	0.12	0.13
2	Share of R&D services provided in GDP, %	0.26	0.24	0.22	0.19	0.19	0.15
3	Share of R&D in export, %	0.01	0.02	0.01	0.01	0.01	0.04
4	Share of R&D in export of services, %	0.09	0.1	0.09	0.07	0.09	0.42
5	Share of innovative products in GDP, %	0.92	0.95	1.55	1.72	1.6	2.43
6	Share of innovatively active enterprises, %	8.1	9.3	9.6	10.6	11.3	11.5
7	Share of researchers in the total number of employed in the economy, %	0.22	0.2	0.2	0.2	0.2	0.21
8	Share of organizations engaged in research and development, %	0.18	0.16	0.15	0.14	0.13	0.12
9	Profitability/efficiency of R&D, %	150.54	171.91	172.14	163.49	158.42	121.64
Note: Compiled by authors							

The share of domestic R&D expenses in GDP is very low and for the period from 2011 to 2020 decreased from 0.15% to 0.13%. The maximum value - 0.17% - fell on the period from 2013 to 2015. The share of R&D services provided in the structure of GDP in 2011 was 0.29%, in 2020 - 0.15%. The maximum value of this parameter was in 2012 and amounted to 0.32%. At the same time, there is an increase in the share of R&D both in the overall structure of Kazakhstani exports and in the structure of exports of services. However, the share is just as low. In 2020, the share of R&D in the country's exports amounted to 0.04% and 0.42% in the structure of services exports. The average annual growth rate was 7.18% and 2.56%, respectively. For the period from 2011 to 2020 there is a double increase in the share of innovative products in the structure of GDP: from

0.84% to 2.43%. The share of innovatively active enterprises increased over the period under review, while the share of organizations engaged in R&D in the overall structure of the country's enterprises decreased from 0.23% to 0.12%. At the same time, the share of researchers in the total employment structure increased from 0.14% in 2011 to 0.21% in 2020 but it still remains low. It should be noted that in 2011, for 1 tenge of internal R&D costs, there were 2.18 tenge of R&D services provided that speaks of a high level of cost efficiency. However, in 2020, 1 tenge of internal R&D costs accounted for 1.22 tenge of R&D services rendered.

General trends in the scientific and social and economic development of Kazakhstan were determined based on calculation of the average values of the growth rates of parameters of scientific and social and economic development (Figure 2).

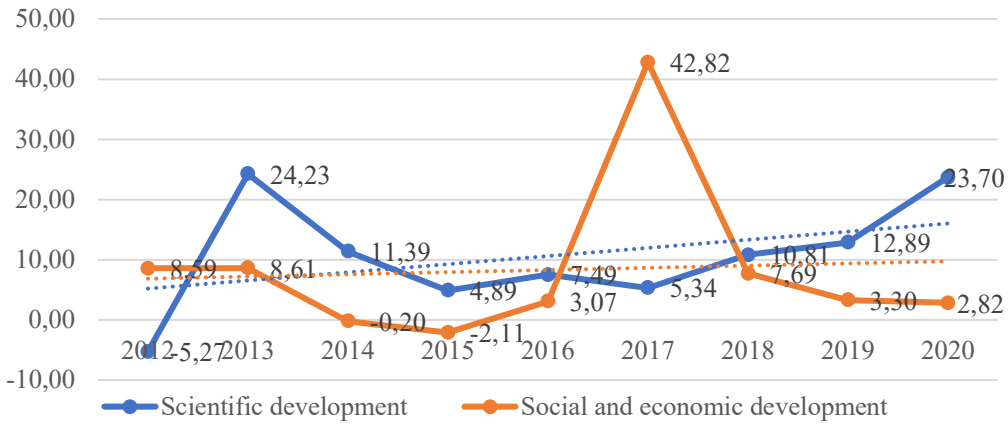

FIGURE 2. Trends in scientific and social and economic development of Kazakhstan, 2011–2020, annual growth in %

Note: Compiled by authors

There are ups and downs in the development of science and technology against the background of sustainable social and economic development within the period from 2011 to 2019 in Kazakhstan. Under the average annual growth rate, the trend in the parameters of scientific and technological development is 1.6 times higher than in the parameters of social and economic development but it is less stable. It is possible to refer to the intellectual and innovative potential, economic potential and scientific personnel potential among the factors that make the greatest contribution to the scientific, technological and social and economic development of Kazakhstan. The science development parameters are still not significant factors in the social and economic development of Kazakhstan. The development pace of the scientific and technological sphere of Kazakhstan and its structure do not meet the tasks of modernization and the growing demand from the economy in full, including the world, for advanced technologies and qualified personnel. This situation has serious consequences for the development of the country's scientific and technological potential. First of all, this is a

lag in the processes of digitalization and the transition to a new technological order, the destabilization of society in the regional and social sections, the widespread use of outdated and environmentally hazardous technologies, etc.

The scientific development rate is higher than the social and economic development rate in Kazakhstan. There is a close positive relationship between the country's science and social and economic development. The main factors that influenced the trend of scientific and social and economic development of Kazakhstan are an increase in the number of scientific and technical articles, PhD students, a decrease in imports, an increase in domestic R&D costs, an increase in the volume of innovative products and manufacturing products, an increase in the number of innovatively active enterprises. Analysis and comparison of average values of growth rates of scientific and social and economic development parameters in Kazakhstan indicate that science and social and economic development are closely related, there is a positive correlation.

5. CONCLUSIONS

The research goal has been achieved. The tasks set in the study have been completely solved using statistical data from the World Bank, the World Intellectual Property Organization, the Bureau of National Statistics, the National Bank, etc. A comprehensive study of the scientific, technological and socio-economic development of Kazakhstan was performed. Based on the analysis of parameters of Kazakhstani science and socio-economic development, the tendencies of the socio-economic and scientific-technological development of Kazakhstan are revealed, the factors influencing the dynamics of the indicators of the development of science, economy and society of the country are determined. In the course of the study, the level of influence of science on the socio-economic development of Kazakhstan was determined.

The following conclusions have been made based on the study performed:

Firstly, there is no universal mechanism to quantify the science impact on the country's social and economic development. The reasons for the lack of a unified methodology intended to assess the science impact are as follows:

1) a long period of time can pass between a scientific hypothesis, experiment, discovery, scientific theory and its application in society;

2) the science influence can be very broad and difficult to measure for different branches of science, and also its science influence can manifest itself indirectly, be non-linear and cumulative;

3) different goals, objectives, technological trajectories and economic results that countries strive to achieve;

4) the possibility to assess the science impact at various levels.

None of the parameters or assessment methods can take into account the diversity and complexity of the technological outputs of R&D programs; accurately describe the processes by which the influence itself occurs; estimate the time lag of the influence; to fully cover the final economic and social results.

Secondly, Kazakhstan has a low level of scientific potential, however, for the period from 2011 to 2020 its stable growth is observed. In recent years, there has been an interest in Kazakhstani science from other countries. Since 2020, there has been a positive

balance of technology balance. While the economic development level and social progress in the country is characterized as high and above average, respectively. The main parameters of the social and economic development of Kazakhstan show positive dynamics. However, during the period under review, there has been an increase in the parameters of the country's economic complexity and competitiveness, however, an increase in the intensity and competitiveness of the Republic's industry has not been noted. There is a low patent and innovation activity in the country, showing the effectiveness of the Republic's science as low. The scientific and technological development of the country has not contributed to the rapid growth of the high-tech and innovative sectors of the economy. There is an increase in the quality of life of the population in the country but no direct science influence has been identified. However, funding for medical sciences remains at a low level that becomes a threat to the development of modern domestic medical technologies that, as a result, may lead to an increase in mortality among the population.

Thirdly, the level of knowledge-intensiveness of the economy in Kazakhstan is very low. Today the potential of Kazakhstani science has not yet been revealed and the results of scientific research are not used in solving applied problems of the social and economic development of the Republic. Increase of funding for R&D, development of scientific infrastructure, building up scientific personnel potential, increasing requirements for the quality of R&D and other measures to increase the efficiency of R&D can help to increase the science impact on the social and economic development of the Republic, not only in quantitative but also in qualitative terms, providing both direct and indirect impact on the economic and social process in the country.

The collected statistical data will serve as a database on the scientific, technological and social and economic development of Kazakhstan for the period from 2011 to 2020. The scientific results obtained in the research course can be applied in the activities of the Ministry of Education and Science of the Republic of Kazakhstan, the Ministry of National Economy of the Republic of Kazakhstan, the Ministry of Industry and Infrastructure Development of the Republic of Kazakhstan, the Ministry of Digital Development, Innovation and Aerospace Industry of the Republic of Kazakhstan, as well as other departments and organizations. The materials contained herein can be used in the educational process.

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Original article

Scientific Approaches to the Definition of Ethno-Tourism Concept

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Abstract

The relevance of this study is due to the fact that at present ethno-tourism is one of the most promising and popular areas in the world tourism market. The study's main purpose is to review and compare tourism development theories in terms of the main drivers of ethno-tourism development. This article examines the theory of the ethno-tourism concept development, its definitions and distinctive elements, and the relationship between this type of tourism and ethnicity and cultural heritage. The authors compared the concept of ethno-tourism with cultural and ethnographic tourism, then revealed a strong tie between these concepts. In addition, the study examined the primary and secondary importance of cultural tourism and ethno-tourism for tourists. A systematic literature review was conducted in June 2022 based on two databases - ISI Web of Science and Scopus, the selected results were analyzed according to common characteristics and attributes: geographical location; assessment methods used in the article. According to the analyzed scientific papers, it was revealed that ethno-tourism research is gaining popularity in Asian countries, and comprehensive research methods are widely used. In addition, this study emphasized the need for collaboration of tourists and local residents in organizing ethno-tourism activities, and the benefits of developing ethno-tourism in the region for representatives of the local community and the regional economy were discussed. The role of ethno-tourism in the preservation and protection of the cultural heritage of local communities was emphasized. Furthermore, the functions and main resources for the development of ethno-tourism were analyzed.

Keywords: Ethno-Tourism, Ethnicity, Cultural Peritage, Local Residents, Cultural Tourism

SCSTI: 06.71.57
JEL Code*:* L83, Z31, Z32

1. INTRODUCTION

The development of ethno-tourism in the world, including Kazakhstan, is a relevant study in the current situation. Kazakhstan is the heart of Eurasia, one of the culturally and historically rich and diverse countries worldwide. Due to the nomadic lifestyle and being a motherland of various ethnic groups, Kazakhstan has a great cultural heritage and potential to develop ethno-tourism. Consequently, a particular governmental program for the spiritual enrichment of people named "Ruhani zhangyru" was created (Order of the Prime Minister, 2021).

Presently, a special interest in traditional ethnic culture, especially nomadism, is gaining popularity. According to the Concept of Tourism industry development of the Republic of Kazakhstan until 2023, ethno-tourism is considered a way to promote the strengthening of family relations, spiritual and moral education of young people, the preservation of cultural and family values (Decree of the Government of the Republic of Kazakhstan, 2017).

As ethno-tourism is linked to economic, geographical, natural, social, cultural, labor resources, and regional structure, it is difficult to evaluate the formation of the key factors of ethno-tourism development and their connections. The study's main purpose is to review and compare tourism development theories in terms of the main drivers of ethno-tourism growth.

The main objectives in order to achieve this aim are:

- to analyze and compare the theories of ethno-tourism concept;
- to develop a theoretical framework for analyzing the main drivers of ethno-tourism development and to consider the benefits of ethno-tourism development for a region based on the performed theoretical review.

Main Provisions. The development of ethno-tourism concept and its implications have been extensively considered, adding the links between tourism and ethnicity, ethnic minority and majority groups, ethnic identity and cooperation of tourists and local residents. The development of ethno-tourism can depend on ethnicity, local representatives of ethnic minorities and majorities, as well as the collaboration of tourists and local residents. It is necessary to compare the concept of ethno-tourism with cultural and ethnographic tourism and reveal a strong tie between these concepts. In addition, the need for collaboration of tourists and local residents in organizing ethno-tourism activities and the benefits of developing ethno-tourism in the region for representatives of the local community and the regional economy is vital.

The main feature of ethno-tourism lies in the fact that tourists pay a great attention to cultural customs that determine a unique ethnicity. Cultural tourism aims to form a tourist's general perception of the situation. There is more emphasis on artifacts, especially ethnic houses, native villages, gastronomy, food, dresses, etc., rather than the specific cultural activities of residents. It should be noted that there is a strong connection between ethno-tourism and cultural tourism. On some occasions, residents may use artificial or modified attractions as authentic and thereby create false tourist awareness. As a result, some tourists have not been able to meet their needs. Still, organizing these activities makes it possible to protect ethnic community and natural resources from unwanted social consequences.

2. LITERATURE REVIEW

There are several studies on the interaction of ethnicity and tourism development. These studies have shown that there is a close correlation between these issues, but other determinants and their impact on the development of ethno-tourism have been researched fragmentally. The emphasis on links between culture and ethno-tourism is clear because ethno-tourism is based on regional resources and in tight with the ethnic culture; however, it justifies how this interaction transforms over time. The ethno-cultural characteristics of different regions of the world are increasingly encouraging people to travel on vacations. The objects visited by tourists contribute to their spiritual enrichment and the broadening of their horizons. Culture is one of the main elements of tourist interest.

According to the development of the ethno-tourism concept, this term was firstly used by Smith in 1977, thereby, this type of tourism was strongly connected to exoticism and unique people. Since then, this concept and its implications have been widely discussed, adding the links between tourism and ethnicity, and the influence of tourism on ethnic minority groups. It is noticeable that some authors consider concept of ethno-tourism in separate ways (Table 1).

TABLE 1. The approaches to the definition of "ethno-tourism" concept

Authors	Definition	Key elements of approach
1	2	3
Smith (1977)	is presented to the audience from a perspective of the «quaint» customs of indigenous and other unique people	«quaint» customs, exotic people
Graburn (1978)	type of tourism with a conjunction of nature and culture, visiting «exotic» places and destinations	culture, «exotic» places
Wood (1980)	this type of tourism should be driven by its straight direction on residents living outside of cultural identity uniqueness, which is advertised for tourists. Tourists can participate in "live culture tours" or observe staged performances	cultural identity, uniqueness
Mclntosh & Goeldner (1990)	type of trip, which aimed to explore the cultural expressions and lifestyles of exotic people	cultural expressions, exotic people
Birzhakov (2000)	subtype of cultural tourism, which aimed at acquaintance with individual nations and people and studying them for the purpose of cultural and language exchange	individual nations, cultural exchange
Moraleva & Ledovskih (2008)	the segment of the tourism industry, which involved the Indigenous population, whose ethnic identity is the main tourist attraction	indigenous population, ethnic identity
Butuzov (2013)	a travel to discover the traditional culture of different ethnic groups	traditional culture, ethnic groups

1	2	3
Polukhina (2016)	type of tourism, which promotes better communication and exchange between people of diverse cultures to involve their culture in the world heritage	culture, communication, heritage
Wang et al. (2020)	a type of tourism in which representatives of other ethnic cultures and their different culture considered as the main tourist attraction, and giving tourists an unusual cultural experience	ethnic cultures, unusual cultural experience
Chistyakova (2020)	connected with the desire of a person to discover other cultural and social spaces, aimed at fixing the distinctive features of human life	images and perceptions of ethnic and cultural diversity
Note: created by author according to references		

Table 1 shows that there is still no single definition of ethno-tourism concept in the academic field. Moreover, in some cases, ethno-tourism has been considered as a type of cultural or cognitive tourism. According to classical definitions of "ethno-tourism" by Smith (1977), Graburn (1978), Mclntosh & Goeldner (1990,) typical destination activities include visiting homes of Indigenous people, local communities, tribes, and involve attending dances and ceremonies, participating in some religious rituals.

In addition, some authors in their works considered ethno-tourism as the same as "ethnic tourism" and it does not change the meaning of this concept. In some cases, authors added to ethno- other conceptions, as graphic or cultural, and it means that ethno-tourism is close to graphic (ethnographic tourism, when tourists try to analyze, research ethnos) or culture (ethno-cultural tourism, which focused on cultural heritage).

However, it is necessary to emphasize the main difference between the analyzed concept and "ethnographic tourism". Ethnographic tourism is based on the interest of tourists in studying and understanding the original way of life of other people, their traditions, rituals, ceremonies, crafts, and culture (Polukhina, 2016).

In addition, the-tourism can be close to rural or agricultural tourism when tourists travel to ethnic villages or rural areas to be acquainted with ethnic culture. In this case, the main purpose of tourism will determine the type of tourism, or it can be a complex type.

In the current situation, ethno-tourism applies to tourism based on tourist's search for different cultural experiences. This can be expressed in travelling to ethnic villages, ethnic minority groups' houses, national parks, participating in cultural events and festivals, purchase of local handicrafts and ethnic souvenirs.

Further, McIntosh and Johnson (2005) explored the ethno-tourism concept and used it as a regional socio-economic development strategy. According to the approaches to the definition of "ethno-tourism" concept, it can be noted that this concept is focused on culture, ethnic identity, cultural expressions, and local communities, which can be unusual to tourists and different from their culture. According to the analyzed concept of ethno-tourism by Moraleva and Ledovskih (2008), ethno-tourism involved the Indigenous population to organize tourist activities. In this case, it is important to emphasize new job opportunities for local citizens, for both men and women. Ethno-

tourism is often conducted in or near the ethnic villages and some research have shown that women group members play vital role in economic performance, in particular the production and distributing of handicrafts or souvenirs (Jeong, 2021). The development of ethno-tourism involves the cooperation of tourists and residents in organizing some activities (Figure 1).

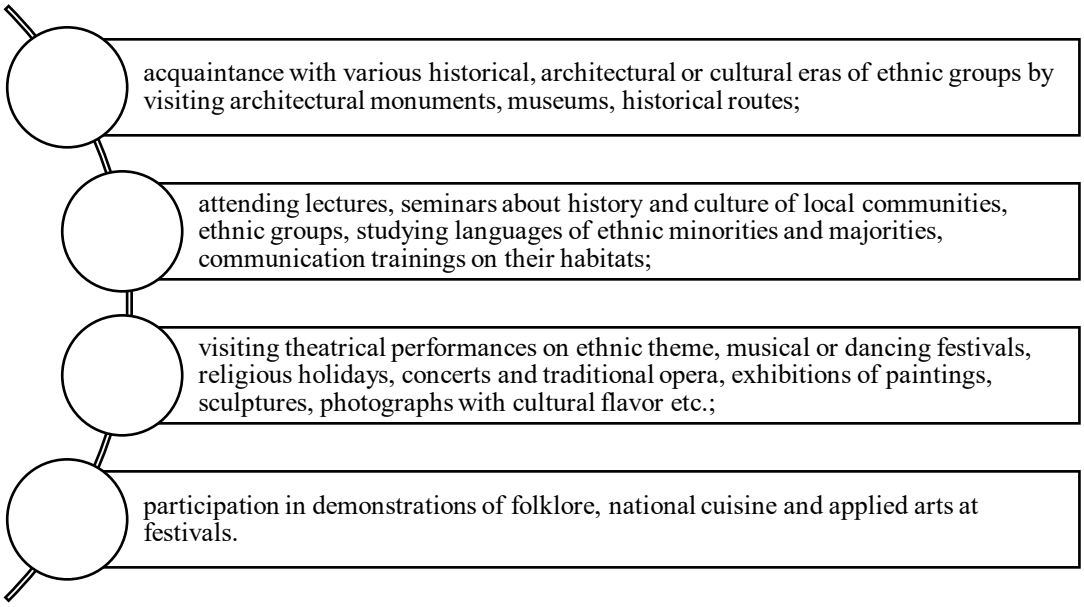

FIGURE 1. Cooperation of tourists and residents in organizing ethno-tourism activities

Note: Created by authors

It was found that a valuable trait in ethno-tourism, such as the friendliness of local communities' representatives, effects on the attractiveness of tourist destinations (Vengesayi, et al., 2009). In addition, the quality of collaboration between tourists and local citizens has been increasingly recognized as a factor enhancing to both tourist's experience and perception of the destination visited (Armenski et al., 2011). Furthermore, ethno-tourism is presented as a dynamic, multi-generational, social phenomenon that changes along with changes in the surrounding reality. In this case, increasingly stronger cognitive aspects were pointed out in the trips of generations born and raised abroad to the country of their parents or grandparents (Zdebski, 2021).

Akent`eva, et al. (2014) reviewed increasing interest in ethno-tourism by raising the number of tourists aspiring to learn about the life of original peoples. Consequently, some functions of ethno-tourism are given in following figure (Figure 2).

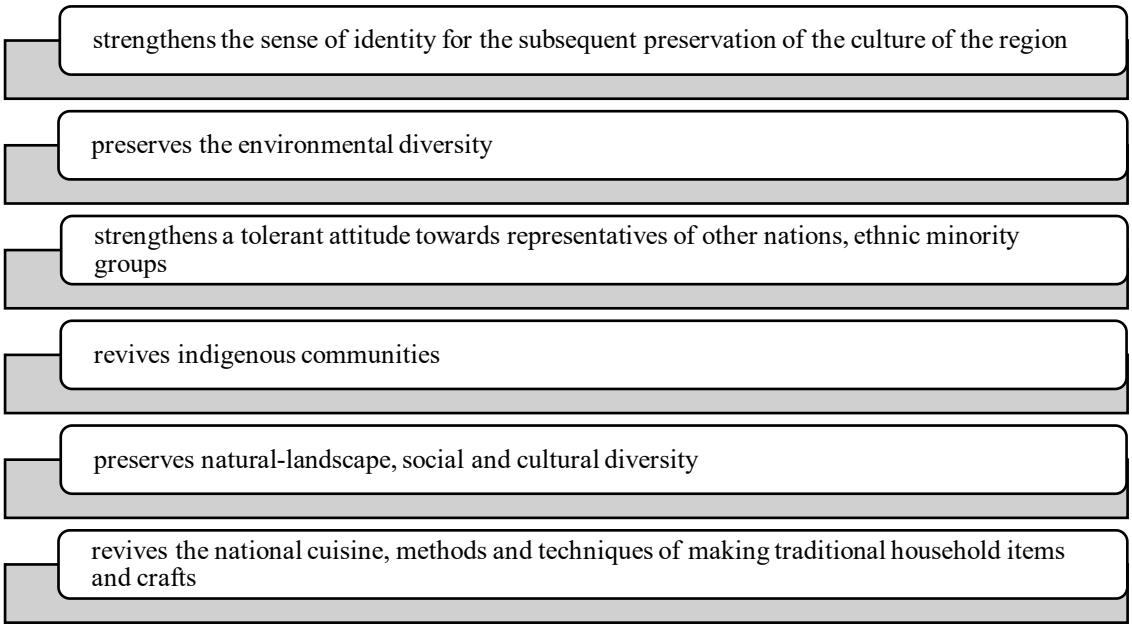

FIGURE 2. The main functions of ethno-tourism

Note: Created by the author based on (Akent`eva et al., 2014)

In addition, for any tourist, any of these forms of tourism can be primary or secondary to another type of tourism (Figure 3).

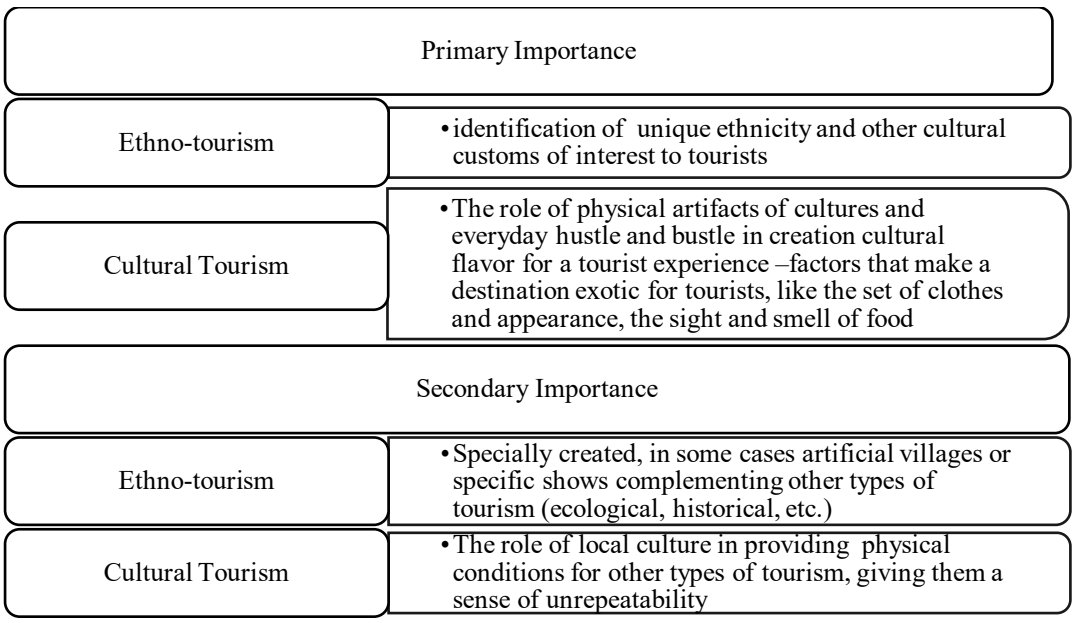

FIGURE 3. Primary and secondary importance of cultural and ethno-tourism
Note: Created by authors based on the reference (Wood, 1980)

3. METHODOLOGY

To conduct the literature review of ethno-tourism concept development, some theoretical methods of scientific research, including analysis, synthesis, induction, and deduction were used. According to Jarvis et al. (2016) tourism is considered one of the largest and fastest-growing industries in the world. It is believed that the cites of local communities are great tourist attractions, a major source of foreign currency income, and they have a big opportunity to form a huge part of the tourism industry. On the other hand, it is argued that the use of nature, especially in untouched and pure nature with traditional diversity of local ethnic groups is recognized as an essential cultural ecosystem service.

Ethno-tourism represents a benefit for tourists who visit protected areas a vast majority of whom are interested in getting acquainted or learning about a culture other than their own (Vidal, 2012). Thus, ethno-tourism is an essential component of the travel experience. A systematic literature review was conducted in June 2022, based on two databases—the ISI Web of Science (http://www.isiknowledge.com) and Scopus (http://scopus.com)-following a systematic and replicable procedure. In order to capture the whole knowledge landscape, we used the search term "ethnic tourism*" OR "ethno-tourism*" in titles, abstracts, and keywords. Then results were combined to define the final research object. The period was set for the last 17 years from 2005 to 2022.

4. FINDINGS AND DISCUSSION

A systematic literature review was conducted in June 2022, based on two databases—the ISI Web of Science (http://www.isiknowledge.com) and Scopus (http://scopus.com)—following a systematic and replicable procedure. Besides, proceedings in Non-English language were excluded. The review resulted in a total of 128 references from Scopus and 157 references from ISI Web of Science. Next, gray literature and duplicates were removed, and 166 papers were remained. Then some articles which titles, abstracts and contents had no relation to ethno-tourism were excluded.

For example, studies about seeing, sightseeing and mimesis (Panakova, 2019), gender and empowerment (Boley et al., 2017), tourism memory, mood repair and behavioral intention (Kim et al., 2022), or ethno-ornithology and onomastics (Chiwanga & Mkiramweni, 2019) etc. were excluded. Then, 107 articles remained to read in detail. According to analyze of this literature, papers with no relevant empirical component, and without connection to ethno- tourism were excluded. In the meantime, the papers were screened to define their clear link to the ethno-tourism topic (Table 2).

TABLE 2. Literature selection process

Source	Number of papers
1	**2**
Paper search in ISI Web of Science	128
Papers search in Scopus	157
Removing duplicates, gray literature	-119
Title, key words, abstract	-59
1	**2**

Full text screening	-54
Analysis studies	53
Note: Created by author based on (Chiwanga & Mkiramweni 2019)	

Based on the classification of identified papers by Cheng et al. (2021) selected results were analyzed by the typical characteristics and attributes: (1) the geographic location of studies; (2) the methods and processes of evaluation used in the article in Figures 4 and Figure 5 (Cheng, et al, 2021).

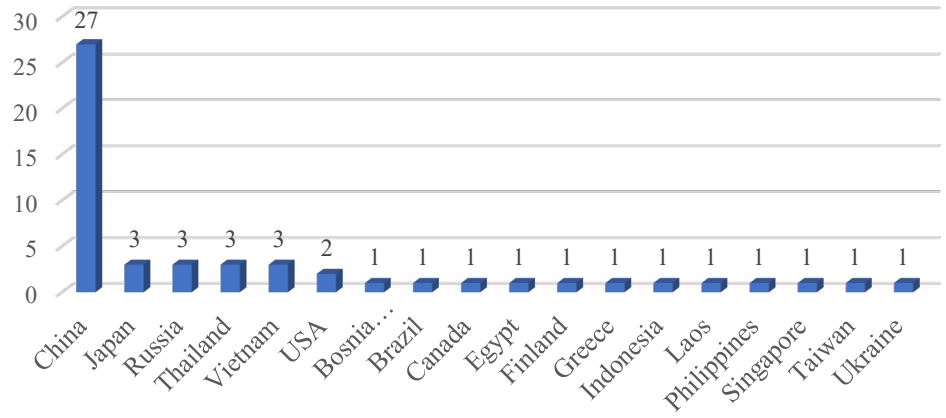

FIGURE 4. Geographic distribution of studies

Note: Created by authors

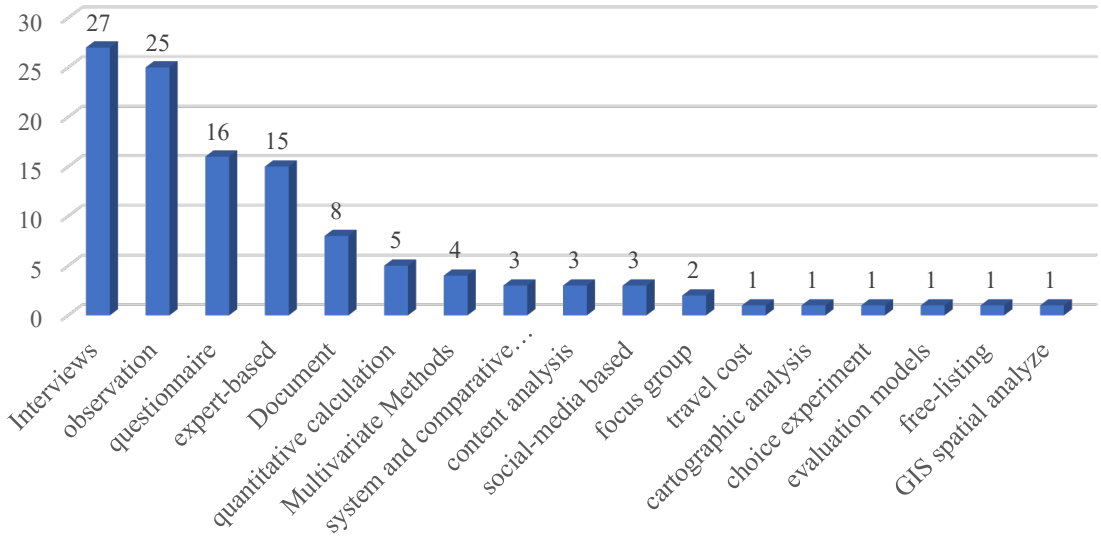

FIGURE 5. Evaluation methods of ethno-tourism development

Note: Created by authors

According to the above data, it can be seen that studies of ethno-tourism are gaining popularity in Asian countries, including China, which is relevant (27 studies). In addition, over the years, 3 research projects have been carried out in Japan, Thailand, Vietnam, and Russia. According to the analyzed research papers, these articles used complex research methods, which means the research work used not only one method but several methods. Among them, the widely popular research methods on the topic of ethno-tourism include the following: interview (27), observation (25), questionnaire (16), expert-based (15) and others. Among the methods for evaluating the development of ethno-tourism, such methods as quantitative calculation, document analysis, multivariate methods, system and comparative analysis, content analysis, focus group, cartographic analysis, and travel cost were used.

The system of ethno-tourism contains the resources that form the basis of the ethno-tourism practice (material and non-material heritage, modern culture, and creativity), the values that people attach to practice (learning, ethnic personality, narrative), and the entitlements that are developed through the practice (ways to engage in ethno-tourism). It is valuable because all these components are interrelated and interdependent (Figure 6).

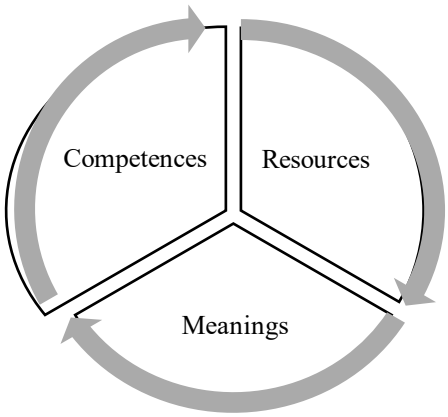

FIGURE 6. The practices of ethno-tourism

Note: Created by authors based on the reference (Richards, 2018)

It is impossible to become an ethnic tourist without ethnic resources to consume, which on the other hand needs a specific level of cultural capital or authority, and valuable meaning for tourists. In organizing ethnic tours, it is necessary to consider the presence of the following objects, which are considered the main ethno-tourism resources:

– monuments of archeology, architectural monuments made in a traditional manner for the ethnic group and associated with a specific stage in the cultural life of the ethnic group;

– religious and civil architecture that reflect the confessional affiliation of representatives of an ethnic group;

– necropolises, burials with traditional tombstones, inscriptions in the national language, ornamentation;
– monuments of landscape architecture;
– small and large historical monuments and settlements;
– local residents houses in national style, with traditional interior decoration and household items
– rural settlements, ethnic villages that have preserved the "traditional look",
– local museums, theaters, exhibition halls, etc.;
– socio-cultural infrastructure;
– venues for ethnic celebrations with the assistance of folklore ensembles in national dresses;
– ethnographic objects, folk crafts and handicrafts, centers of applied arts, technical complexes, and structures.

Furthermore, the development of ethno-tourism has some positive effects and benefits:
– ethno-tourism contributes to an awareness of ethnic identity;
– it also provides benefits to ethnic minority groups, by using ethnicity as a resource that generates income and profit, furthermore, promotes cultural diversity;
– economic benefits, involving higher revenue, more job opportunities, raising the quality of life, and the emergence of entrepreneurial opportunities;
– gives a great chance to promote ethnic group, their history, and their culture to the world tourist market;
– it can also be a positive force for cultural revival, by regeneration of religious ceremonies, cultural performance, forms, and craft production;
– encouraging creativity;
– the pride in local culture can contribute to the self-awareness of local residents and strengthen ethnic identity;
– gives a big opportunity to create and project positive ethnic image.

5. CONCLUSIONS

Ethno-tourism can give valuable information to tourists about the region and local communities, their history, and their culture. It is possible to create an attractive ethno-tourism destination through performing and visual arts, literature, national music, and handicrafts. In this case, the development of ethno-tourism in the local region can help to preserve and protect the cultural heritage of local community groups. In some cases, local communities can use modified attractions as authentic and create false tourist awareness. As a result, some tourists could not satisfy their needs, but these performances may protect the ethnic community from undesirable social consequences. According to performed analysis, a close connection between ethno-tourism and cultural tourism was discovered. Furthermore, this study considered and compared the primary and secondary importance of cultural and ethno-tourism for tourists.

The system of ethno-tourism contains the resources that form the basis of the ethno-tourism practice (material and non-material heritage, modern culture, and creativity), the

values that people attach to practice (learning, ethnic personality, narrative), and the entitlements that are developed through the practice (ways to engage in ethno-tourism).

Additionally, the system of ethno-tourism was reviewed as complex, which contains the basis of ethno-tourism practice, the values that people attach to practice, and the rights that are developed through practice. Apart from that, the positive effects and benefits of the development of ethno-tourism to local communities and the regional economy were discussed.

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Food Market of the Republic of Kazakhstan: Export Opportunities

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Abstract

The article analyzes the resource potential of export opportunities of the agro-industrial complex of the Republic of Kazakhstan. It presents a study of agro-industrial exports over the last five years, highlights the main problems in this area and the measures taken by the state to solve them, and emphasizes the problems of non-tariff regulation of exports of agro-industrial products of Kazakhstan. The creation of accredited laboratories for examining agricultural products according to international standards is proposed as one of the directions for solving this problem. Purpose of the research is to study the export potential of the food industry of the Republic of Kazakhstan and to develop proposals to increase its share in the structure of the country's exports. Presented a study of exports of agro-industrial complex products of Kazakhstan for 2016-2020, identified the primary problems in this area of research, the steps of state support for their solution, described the issues of non-tariff regulation of exports of products of the country. One of the possible ways of solving this problem is the opening of accredited laboratories for the examination of agricultural products by international standards. Results of the study: Based on the analysis of the expansion of the range of exports of the Republic of Kazakhstan in the context of consolidated commodity groups, the authors show that the highest concentration of exports is in the export of mineral products. In addition, stable diversification growth is observed in exporting agricultural products of both animal and plant origin. The need for certification of agricultural products through creating a network of laboratories that meet the requirements of international standards in the exporting countries is conditioned.

Keywords: Economics, Agro-Industrial Complex, Food Industry, Export, Certification of Products

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1. INTRODUCTION

Balanced economic development of the state creates prerequisites for the growth of the welfare of its population and increases the importance of the country in the international division of labor. The economic development of the state should be based on appropriate dominants, capable to entail a systemic effect of progressive movement of the whole economy. Limited resources should be directed to those sectors, which are capable to be a locomotive for the development of others, and conditions of Kazakhstan, the priority direction is development of the agrarian sector of the economy. Compared with the central and southern regions of Kazakhstan, the development of the West Kazakhstan region is less dependent on agricultural production, considering the natural resource potential. Still, the region concentrates significant capacities for processing of agricultural raw materials. The border position of the region contributes to the development of foreign economic relations with the Russian Federation, but the structure of these relations does not fully represent the sectoral production potential of the regional economy, which leads to the loss of potential income. While the structure of food imports everywhere creates excessive competition for domestic producers and leads to inefficient foreign currency spending. Therefore, determining of priorities in increasing exports of the region's agro-industrial complex will make it possible to solve the problem of forming an effective structure of the region's economy, taking into account regional specifics and national interests.

2. LITERATURE REVIEW

"Export opportunities" of a country or region refers to its «ability to develop market and property» and "ability to profit" in foreign markets where its products are sold (Farinha et al., 2018).

There is a significant amount of literature on the export competitiveness of agricultural products. However, most studies have focused on developing countries (Henson & Loader, 2001; Srivastava et al., 2006; Babiker et al., 2011; Erkan & Yildirimci, 2015; Su et al., 2020), but few have considered developed countries (Ferro et al., 2015; Gilbert & Mukhova, 2018). In recent years, there has been a growing interest in studying Kazakhstan's food market in order to forecast promising export opportunities.

The export-oriented strategy for the development of the agro-food complex of Kazakhstan needs justification in the context of food security policy, which involves resolving the contradiction between the national interests associated with the saturation of the domestic market of the Republic, and the attitude to improve competitiveness in world food markets, as well as the development and implementation of export potential. In connection with this situation, we set the task of studying the export capabilities of the food industry of the Republic of Kazakhstan, identifying the main problems of export development of food products, and outlining possible ways to solve them in the framework of this study.

Currently, there is a lack of work in the theory and methodology of international trade that explains the factors or trends of export development, particularly in view of its impact on the domestic market of the exporting country. On the one hand, an export's research

methodology has been developed within the framework of the gravity approach (Anderson & Van-Wincoop, 2003; Tinbergen, 1962), in which the distance between trading partners, partners' GDP, and a number of other factors explain export flows, but its capabilities are limited in the part of solving problems of assessing the impact of exports on the internal market.

The theoretical basis explaining the interaction of export with an exporting country's domestic market includes international trade models in which this relationship is implemented within the framework of the general equilibrium mechanism (Krugman, 1980; Melits, 2003). Through this mechanism price spikes in the export market lead to a change in the cost of factors of production in the domestic market, which impacts on the volume of the domestic production. However, trade models are designed to explain global trends in international commodity exchange and are poorly suited to explain the relationship between exports and domestic sales. Moreover, standard models of international trade are based on the assumption that domestic and export sales of firms do not depend on each other, i.e., firms maximize profits in one sales market independently of another, which does not allow us to study the relationship between exports and the domestic market, bypassing the mechanism of general equilibrium.

In most publications devoted to the analysis of the relationship between the state of the domestic market and exports, generally the influence of domestic market factors, primarily domestic demand, on the dynamics of exports is estimated. Many foreign studies in this area are conducted at the micro level, i.e., at the level of firms, the results of which were then used for analysis at the macro level. (Krugman, 1980; Vannoorenberghe, 2012; Wang, 2016)

The analysis of publications on the research topic showed that there are arguments both in favor of a negative substitution effect between exports and supplies to the domestic market (Almunia et al., 2018; Esteves & Rua, 2015; Lee et al., 2009; Bobeica et al., 2016; Bugamelli et al., 2015), and a positive one when sales for export and to the domestic market complement each other (Berman et al., 2015; Erbahar, 2020).

3. METHODOLOGY

During the study, monographic, abstract-logical, and economic-statistical methods were used. Based on the principles of classical economic theory and institutional theory, the concepts of export potential of the agro-food complex and the food industry of Kazakhstan were investigated, and the specifics of its formation were revealed, taking into account the object of research. Based on economic and statistical methods, we assessed the trends and prospects of growth of food production and export potential of Kazakhstan's agro-food complex. In addition to some specific methods, the following scientific approaches to analyzing the problem were used: dialectics, abstraction, deduction, induction, analysis, and synthesis.

The official statistical data from the Bureau of National Statistics of the Republic of Kazakhstan, the State Revenue Committee of the Ministry of Finance of the Republic of Kazakhstan, and the COMTRADE international trade database were used to calculate this analysis.

To determine the development of product exports, we used the indicators accepted in international practice: the degree of export concentration, the standard deviation from the average export value, the unit weight of the standard deviation from the average export value («Qaztrade» Trade Policy Development Center, 2020; IFPRI, 2020).

The degree of export concentration is a theoretical value determining the number of similarly sized export products. This indicator is more suitable for sectoral studies as it is less sensitive to evaluation relative to overall indicators. The higher the value of the index, the more diversified the exports and, consequently, the higher the rating of the exporting country. The degree of export concentration is calculated according to the following formula (1):

$$NE_{iclt}^{t} = \frac{1}{\sum_{k=1}^{n}\left(X_{i.k}^{t}/X_{i.cl}^{t}\right)^{2}} \quad (1)$$

Where:

$i.k\ X$- exports of products k from country i in period t;

$i.cl\ X$- export of commodity group cl from country i in period t;

$i.k\ X/Xi.cl$ - the share of products k in the exports of commodity group cl of country i

The standard deviation from the average export value complements the degree of export concentration and is the dispersion-a measure of dispersion between the highest and lowest values of a statistical series, that is, the deviation from the average. This index reflects each country's export production distribution and compares it to the average export value.

The specific weight of the standard deviation from the average export value (SD SD) is calculated as follows: first, we find the variance, then the standard deviation (SD), and then the specific weight by the following formula (2):

$$S_{cl}^{t} = \left[\frac{\sqrt{\sum_{k=z}^{cl}\left(X_{i.k}^{t} - \overline{X}_{i.cl}^{t}\right)^{2}}}{N\left(\overline{X}_{i.cl}^{t}\right)}\right] \quad (2)$$

Where:

$_{i.k}\ X$- exports of products *k* from country *i* in period *t*;

$\overline{X}i.\ cl$ is the average export value of country *i* for all the products included in product group *cl* for period *t*;

($Xi.\ k$ -$\overline{X}i.\ cl$) is the deviation from the average value of production *k* from country *i* for period *t*;

$\sqrt{\sum_{k=1}^{cl}\left(X_{i.k}^{t} - \overline{X}_{i.cl}^{t}\right)^{2}}$ - standard deviation;

S_{cl}^{t} - the specific weight of the standard deviation.

4. FINDINGS AND DISCUSSION

Kazakhstan is an industrial-agrarian country where the stabilizer of economic development is the creation of conditions to ensure the competitiveness of products of animal and plant origin and support the timely sale, processing, and export of agro-industrial products. Improving the competitiveness of agricultural products is impossible without state support, where the main measures are additional state subsidizing of interest on loans of agricultural producers, insurance of agricultural activities, infrastructure development, and other effective impact levers.

The country's agriculture specializes in the production of meat - beef, lamb, horse meat, and grain - wheat, barley, rye, millet. Currently, Kazakhstan's high-quality and environmentally friendly organic agricultural products are exported to almost 70 countries worldwide. Kazakhstan plays a leading role in food security in the entire Central Asian region, occupying the leading position in producing and exporting grain and oilseeds. In addition, Kazakhstan is among the world leaders in the export of wheat and flour, where Kazakh grain ranks high on quality indicators. The analysis of relative indicators - the production of primary agricultural products per capita in the country for 2016-2020 is presented in Table 1.

TABLE 1. Production of main agricultural products per capita in the Republic of Kazakhstan, kg

Types of products	2016	2017	2018	2019	2020	2020 as % of 2016	On average, in Kazakhstan
Cereals and legumes	1159,6	1141,2	1109,3	941,4	1069,8	92,3	1084,3
Potatoes	199,3	196,9	208,3	211,3	213,6	107,2	205,9
Vegetables	213,3	210,2	223,3	235,2	244,8	114,8	225,4
Bahrain crops	116,4	116,1	117,2	128,7	129,3	111,1	121,5
Meat of livestock and poultry (slaughter weight)	54,0	56,4	58,0	60,5	62,3	115,4	58,2
Milk	300,2	305,1	311,1	316,8	322,6	107,5	311,2
Eggs (pieces)	267,3	282,9	305,9	298,8	270,1	101,0	285,0
Source: compiled by the author based on the source Bureau of National Statistics (2022)							

This table shows that the dynamics of production growth are observed for almost all types of presented agricultural products, except for cereals and legumes. The decrease in the production of this indicator per capita in 2019-2020 was caused by the abnormal drought, due to which the volume of crop production decreased by 6.7% (4.2 trillion tenge), while the volume of livestock production achieved growth by 3.6% (3.1 trillion tenge).

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Thus, in 2020, livestock and poultry production increased by 15.4% compared with the base year. The growth of meat production is due to the availability of pastures, forage for own production and the possibility of distant cattle breeding, which complies with Halal requirements and confirms the huge export potential of the country.

In 2021, the volume of exports of Kazakhstani products of animal and plant origin increased threefold compared to 2020. Thus, this indicator amounted to $20.101 million and 13.376 million euros, $1.457 million and 9.226 million euros, respectively.

The central countries that consume agricultural products from Kazakhstan are Germany, Sweden, Great Britain, as well as Belgium, the Czech Republic, and Lithuania. In 2021, agricultural products were supplied to Ukraine and China for the first time. Thus, for 2020-2021, Kazakhstan exported 5.576 tons and 29.219 tons of organic wheat, 14.727 tons and 12.07 tons of organic flax, 321.4 tons and 9.61 tons of organic soybeans, and 328 tons of organic millet, respectively (Mars, 2020).

It is planned to maintain a similar trend in the future. The trends observed in the agricultural sector are due to the fact that this market is a priority for the economy of West Kazakhstan region. The state supports farmers and agricultural producers within the State Program of Agro-industrial Complex Development of the Republic of Kazakhstan for 2017-2021.

It is planned that with the help of a similar program, it will be possible:

- To increase labor productivity by 2.5 times to 4.0 million tenge per person employed in agriculture;
- to increase processed product exports by 2.5 times to $2.7 billion. The country's exports of refined products increased by five times to $2.7 billion;
- to increase the volume of gross agricultural production by a factor of two;
- to increase the inflow of investment in fixed capital in the industry by three times;
- to increase the volume of attracted credit funds by nine times by 2021 to the level of 2017.

The livestock market subsidy program aims to maximize the effectiveness of state support measures for the industry in priority areas.

As a state with a raw material orientation economy, Kazakhstan tries to limit the export of raw materials and to stimulate the deep processing of raw materials. Restrictions on the export of raw materials are methods of quotas and licensing, the introduction of an export ban, increased customs duties. So, there is currently a ban on the export of buckwheat, white sugar, potatoes, onions, garlic, sunflower seeds, and oil. Quotas have been introduced for carrots, turnips, beets, cabbage, as well as for flour and wheat.

The Strategic development plan of the Republic of Kazakhstan until 2025 sets the target for non-resource exports at $41 billion. The target indicator of non-resource exports is $41 billion. Achievement of the target indicator of the Strategic Plan on the

volume of non-resource exports is only possible with the creation of favorable conditions for entrepreneurs and the provision of government support measures for domestic producers and service providers.

The food industry of Kazakhstan is one of the strategically important industries designed to provide a sustainable supply for the population with the necessary quantity and quality of food products. The domestic market of livestock products is characterized by a sufficient degree of saturation in the form of raw materials, which fully covers the solvent demand of the population. At the same time, the annual growth of livestock production in the republic is within 5%. The Republic of Kazakhstan, in recent years confidently takes the third place in the world in terms of flour exports. For the past period, flour exports were 4.7% higher compared to the previous year, in addition, exports of condensed milk increased by 73 times, processed milk by two times, canned fruit by 1.9 times, and rice by 85.5%.

Since 2010, over the past ten years, the volume of food production in the country as a whole grew by 2.45 times and amounted to 1,708 billion tenge.

Kazakhstan's key challenges in expanding the food industry are:

- support for innovative enterprises in the food industry;
- expansion of the product range and improvement of marketable appearance;
- improving the quality and safety of food and other products to preserve public health.

Increasing domestic food production could help improve the structure of the social output, since the successful development of the food industry stimulates the development of agriculture and related industries.

Analysis of the development of the food industry of the Kazakhstan shows its stable growth (see Table 2).

TABLE 2. Growth of food industry production by sector

Industries, billion tenge	2016	2017	2018	2019	2020	Growth 2020/ 2016	Growth 2020/ 2019
1	2	3	4	5	6	7	8
Meat processing and canning, and production of meat products	204	205	228	297	313	53%	5%
Processing and canning of fish, crustaceans and mollusks	14	17	19	22	27	89%	19%
Processing and canning of fruits and vegetables	105	106	103	93	99	-6%	7%
Production of vegetable and animal oils and fats	121	138	136	154	175	45%	13%
Production of dairy products	225	245	277	311	359	59%	16%
Production of flour industry products, starches and starch products	307	302	265	309	375	22%	21%

1	2	3	4	5	6	7	8
Production of bakery and flour products	196	223	223	210	252	28%	20%
Production of other food products	241	233	210	230	240	0%	5%
Production of finished animal feed	35	55	69	82	89	153%	8%
Beverage production	254	312	344	398	433	70%	9%
Note: Data are based on the source («Qaztrade» Center for Trade Policy Development, 2020)							

Considering the structure of the food industry in comparison with 2020 in 2016, last five years high growth showed such commodity items as "Production of ready-made animal feed" growth - 153% from 35 billion tenge in 2016 to 89 billion tenge in 2020,

"Processing and canning of fish, crustaceans, and molluscs" growth - 89% from 14 billion tenge in 2016 to 27 billion tenge in 2020, "Beverage production" growth - 70% from 254 billion tenge in 2016 to 433 billion tenge in 2020. The decrease is observed in "Processing and preserving of fruits and vegetables" sectors decrease by 6% from 105 billion tenge in 2016 to 99 billion tenge in 2020 and "Production of other food products" decrease by 0,1% from 241 billion tenge in 2016 to 240 billion tenge in 2020.

Given the difficult year of 2020 caused by the coronavirus pandemic, the food industry has a positive growth in relation to 2019. Thus, high growth for the year was shown by "Production of flour industry products, starches and starch products" - 21%, "Production of bakery and flour products" - 20%, "Processing and canning of fish, crustaceans and mollusks" - 19% and "Production of dairy products" - 16%.

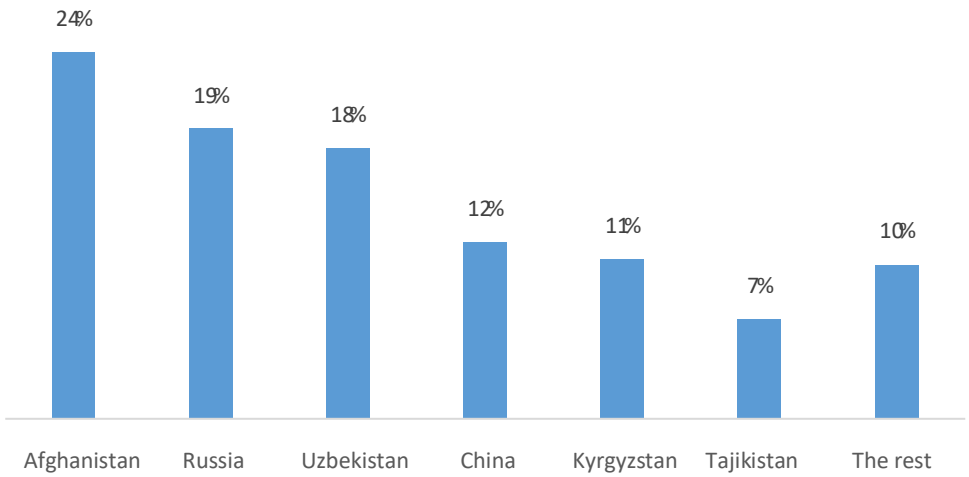

FIGURE 2. Share of Kazakhstan's exports by importer, %
Source: Data are based on the source («Qaztrade» Center for Trade Policy Development, 2020)

Six countries occupy the main supply markets of Kazakhstan's food industry with a share of 90%, given that exports in 2020 were made to more than 59 countries. About 24% of exports go to the market of Afghanistan, then 19% of products are exported to

Russia. The Uzbek market accounts for 18% of all exports, the Chinese and Kyrgyz markets account for 12% and 11%, respectively, and the Tajikistan market accounts for 7% of all RK exports. Other countries account is about 10%.

The share of Kazakhstan's exports by importer presented in Figure 2.

In comparing Kazakhstan's export volumes with the world leaders in this industry, our country is at a relatively low level. Thus, the volume of U.S. exports exceeds that of Kazakhstan by 55 times, Germany - by 51 times, the Netherlands - by 48 times. The volume of exports of Kazakhstan's food industry products is 11 times less than that of Russia (Figure 3).

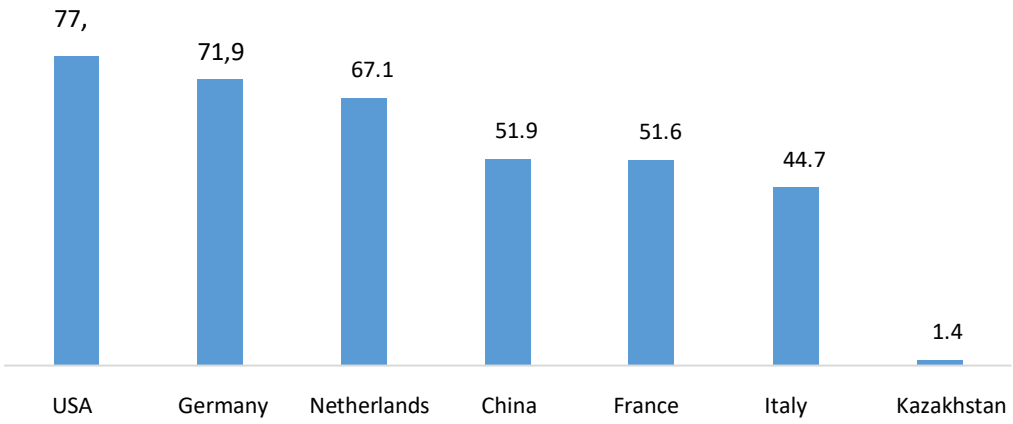

FIGURE 3. Comparison of Kazakhstan's food industry exports with the world leaders, $ billion USD

Source: Data are based on the source Bureau of National Statistics (2022)

Methods to stimulate exports include the reduction of taxes and customs duties on exported products of deep processing. In addition, the state provides advisory support to exporters and compensates them for participation in exhibitions.

Support for exports of products of the agro-industrial complex and its processing industry will increase their competitiveness. This can be achieved through additional state subsidies for payment of interest on loans, insurance of activities, development of infrastructure, and creation of other competitive advantages.

The head of state has set a goal of increasing productivity and exports of processed agricultural products by 2.5 times by 2022.

In 2019, exports of agribusiness products totaled 12.41 million tons worth $3.29 billion, an increase of $198 million or 6.4 percent over 2018 (according to the MNE Statistics Committee).

At the same time, the share of exports of processed products in the total exports of agribusiness products in 2018 was 33.65% (2.8 million tons worth USD 1.107 billion). The State Agribusiness Development Program over-fulfilled its targets for exports of agribusiness products by 24.1% ($3.29 billion vs. the plan of $2.65 billion).

The export of Kazakhstan's agro-industrial products to priority markets is growing. Thus, the export of agricultural products to China increased by 50.5% (total export - 388

million USD), to the Persian Gulf countries (Qatar, Kuwait, UAE, KSA, Oman, Bahrain) by 3.2 times (11.5 million USD), to Central Asian countries (Uzbekistan, Afghanistan, Tajikistan, Kyrgyzstan, Turkmenistan) by 7.4% (1,559 million USD), to the EAEC countries by 8.2%, i.e., 598.0 million USD (Food Industry, 2020).

Support for exports of products of the agro-industrial complex and its processing industry will increase their competitiveness. This can be achieved through additional state subsidies for payment of interest on loans, insurance of activities, development of infrastructure, and creation of other competitive advantages. Deliveries of the top 15 commodities in the ten digits of the TN VED account for 80.4% of exports, with crude oil accounting for 57.8% of all exports. In the structure of Kazakhstan's processed exports, exports of intermediate goods have the largest specific weight. For 2019, exports of passenger cars increased 2.7 times compared to 2018. Exports of gasoline fuel (2.9 times) and means of production (2.2 times) also increased markedly.

In 2014-2019, 144-171 types of products were exported in the commodity groups "Products of animal and plant origin, finished food products" at the level of 4 digits of the TN VED (Table 3).

TABLE 3. The leading indicators of the commodity group "Products of animal and plant origin, finished food products" in Kazakhstan

Export performance	Unit.	2015	2016	2017	2018	2019
Export volume	million dollars. USD	2 136,2	2 150,0	2 417,6	3 102,1	3 282,5
Number of export items at the 4-digit level of TN VED	export article	159	165	164	166	171
Degree of export concentration (equivalent number)	number	5,937	5,901	8,049	7,396	8,116
Standard deviation from the average export value (standard deviation)	million dollars. USD	68,21	67,66	64,89	86,54	86,00
Specific weight of the standard deviation from the total volume of exports	%	3,19%	3,15%	2,68%	2,79%	2,62%
Note: Data are based on the source based on the source Bureau of National Statistics (2022)						

At the same time, the indices that characterize the diversification of products have the following values. Degree of export concentration: 3.077 to 8.116. Standard deviation from the average value of exports: from 64.89 to 139.3 million USD. USD, or 2.62% to 4.7% by share of total exports by commodity group. Wheat and flour have the largest share by commodity. In recent years, there has been a trend of increasing flour exports and decreasing exports of wheat. The impact on the diversification of other goods is

insignificant. Below are the first ten types of export products of the considered commodity group.

Analysis of the level of diversification of Kazakhstan's exports in terms of aggregated commodity groups showed that the highest concentration of exports is observed in the export of mineral products since crude oil accounts for a large share of exports in this commodity group. In addition, among other commodity groups, a stable upward trend of diversification is observed only in the export of products of animal and plant origin. It is worth noting that the export basket includes some goods, the export of which is growing despite the crisis.

Table 4 shows the data on the dynamics of exports of agro-industrial products of the Republic of Kazakhstan for 2017-2021. Products of animal and plant origin occupy, on average 0.3% of the region's total exports.

TABLE 4. Export of TOP 14 agro-industrial products in the total exports of the Republic of Kazakhstan for 2017-2021

№	Name	2017	2018	2019	2020	2021	
						thousand dollars. U.S.	% of total
1	Live cattle	555,5	1 228,6	50,6	179,9	507,3	0,07
2	Cattle meat	595,3	2631,6	2 527,9	1078,8	262,7	0,04
3	Pork	77,0	133,1	187,9	123,9	0	0,00
4	Lamb	96,0	230,7	232,8	720,9	0	0,00
5	Poultry meat	883,5	1 033,1	1 562,1	2 399,5	1 610,1	0,23
6	Cheeses and cottage cheese	817,1	543,7	1 360,1	695,0	821,7	0,12
7	Eggs	277,0	1 348,5	1 014,6	54,4	718,5	0,10
8	Wheat	3 899,6	11 174,2	9 022,9	11 331,0	1 095,9	0,16
9	Barley	43,4	1469,9	543,3	163,1	0	0,00
10	Rice	734,8	539,4	1 054,3	810,4	2 077,4	0,30
11	Wheat flour or wheat and rye flour	978,9	1 687,4	2 164,3	1 399,0	1 109,3	0,16
12	Flax seeds	1 134,1	138,0	2 233,4	1 187,0	2 250,4	0,33
13	Sunflower oil	644,5	588,8	790,4	904,0	328,1	0,05
14	Margarine	1 087,7	1 060,7	1 231,9	668,6	1 051,6	0,15
15	Other	471 010,90	484 589,62	639 853,44	531 241,55	674 835,80	98,28
	Total	482 835,40	508 397,50	663 830,0	552 956,9	686 668,8	100

Note: Data are based on the source based on the source Bureau of National Statistics (2022)

According to the data on the export of agro-industrial complex products for the last 5 years, it can be seen that the largest share in the total exports of agro-industrial complex of Kazakhstan is wheat flour (wheat and rye), so the average indicator is - 25.6%. Until 2020, there were growth dynamics, but due to the pandemic COVID-19, as well as changes in climatic conditions, wheat flour exports decreased by 8% compared to 2019, and in 2021 by 9% compared to the previous year.

In addition, Kazakhstan exports livestock products, where the leading position is taken by the meat of cattle and poultry, so the average share for the analyzed period is 25% and 26%, respectively.

In 2021 the export of rice to the amount of 1,267.0 thousand dollars sharply increases and reaches 0.3% in the total structure of exports. While the export of mutton and pork is not observed due to the need to supply the domestic market. Earlier, the main export of mutton (up to 97%) was made to the United Arab Emirates (UAE), Uzbekistan and Russia. And also to Iran, Azerbaijan, Bahrain and Oman.

Also in 2021 there were no barley exports, this is due to the fact that there were problems with the shipment of barley to China. In addition, some other major buyers of Kazakh barley began active purchases only since December, which also affected the final volume of shipments.

According to FAO projections, the world will need to feed 8.5 billion people by 2030. At the same time, the expected growth of world crop production by 2030 will be achieved by increasing crop yields by 87 percent, by introducing new lands into circulation by 6 percent, by increasing the intensity of farming by 7 percent. The expected growth of livestock and fishery production will also be achieved, primarily due to an increase in productivity. An increase in livestock numbers in emerging and low-income countries is expected to be one of the most important drivers of livestock production growth.

The next billion consumers are diverse, ranging from low-income consumers in Africa, rural consumers in Asia, all the way to the emerging middle class in Latin America and consumers in many developed markets who developed the habit of consuming online shopping products during the COVID-19 pandemic.

At the same time, amid the pandemic, food prices continue to rise. The FAO Food Price Index (FFPI) averaged 133.2 points in October 2021, up 3.9 points (3.0%) from September and 31.8 points (31.3%) from October 2020. This is the highest level since July 2011. The increase from the previous month was mainly due to the continued rise in world prices for vegetable oils and grains.

Today, the key trends in the food industry are:

- consumer interest in environmentally friendly products;
- tightening environmental standards (both by certain countries and international organizations), a priority for "green technology" - the main factor in the development of industry, including the production of finished and semi-finished products, will be the availability of raw materials for processing.

The effectiveness of export promotion of Kazakhstani goods and services is determined by the presence of unreasonable restrictions and barriers that exporters face. Based on the results of general meetings with representatives of business, government agencies, development institutions, nongovernmental organizations, and transport companies, a set of barriers and problems negatively affecting the development and

promotion of export products was identified, the key among which was problems of studying and meeting technical standards and requirements imposed on Kazakhstani products by third countries. Eliminating the identified barriers and restrictions that hinder the development of companies' export potential will create favorable conditions for the stimulation of export operations (Government of the Republic of Kazakhstan, 2017).

Today, one of the key conditions for participation in international food trade is the ability of the exporting country and the specific enterprise manufacturer to ensure the safety of manufactured products. The main factor determining the competitiveness of products is the quality of food products, which is characterized by safety indicators. Kazakhstan joined the World Trade Organization, and a prerequisite was introducing a quality management system - the HACCP system - at all food enterprises. New requirements for manufacturers of food products have emerged regarding the safety of manufactured products (Niyazbekova & Brodunov, 2020).

The Republic of Kazakhstan has all opportunities for the large-scale export of agricultural and food products, turning this area into a powerful item of income. Kazakhstan has the most favorable political decisions in this regard with the Russian Federation, China, and other countries. However, the wide export of agricultural products of the region is significantly hampered by the problems of their certification for compliance with international requirements (Ibyzhanova et al., 2021).

In Kazakhstan, many regional enterprises have implemented ISO and HACCP standards. There are several types of ISO certificates:

- environmental management system certificate;
- food safety management system certificate;
- certificate-system for occupational health safety management;
- environmental management system certificate;
- information security management system certificate;
- certificate-systems of energy management.

The advantage of having a certificate is entered into the international market when obtaining grants, participating in tenders, and as a necessity for any company in the food industry engaged in producing, selling, packaging, and storing food products.

The Roadmap for the promotion of exports of non-resource goods and services dated September 2, 2019 includes activities of agricultural products (on the harmonization of mandatory TBT requirements, access to standards of priority countries for export; development of accreditation and testing facilities, as well as the involvement of internationally recognized conformity assessment bodies; recognition of conformity assessment results conducted by Kazakhstani laboratories and conformity assessment bodies).

5. CONCLUSIONS

Thus, the food industry is one of the leading manufacturing industries in the country. The state is taking measures to cover domestic demand with local products, investments in the sector are increasing significantly, including at the expense of its funds. Global and regional comparative advantage in several products has already been achieved. At the same time, we should take into account such features of the industry as an excess of

imports over exports, high concentration of exports by individual products, and high concentration of enterprises in the context of sectors.

Analysis of the current situation demonstrates the presence of a sufficient level of export potential of the AIC of the RK on the one hand and a set of measures of state support for the promotion of Kazakh agricultural products in foreign markets. However, further work is required to regulate the certification of products through the creation of a network of its own laboratories that meet the standards of exporting countries.

Laboratories are an important component of the food control system. In any country, a network of well-equipped laboratories and a surveillance system is necessary to establish an effective and efficient food control system. Establishing laboratories requires a significant investment, and significant financial resources are needed to maintain and operate them. Therefore, careful planning of laboratory activities is necessary to achieve optimal results. The required number and location of laboratories must be determined according to the system's objectives and the scope of work.

The establishment of laboratories requires significant investments, and significant financial resources are needed for their maintenance and operation. In Kazakhstan, 14 laboratories are carrying out laboratory research in the field of food safety. However, the existing laboratories conduct research only according to the methods and standards of the Republic of Kazakhstan.

Moreover, the accreditation of Kazakh laboratories in the National System is limited to the CIS countries and is not recognized in the PRC, EU, Iran. Under such conditions, manufacturers are forced to transfer product samples for specific quality parameters to foreign laboratories, increasing the lead time and significantly increasing the research cost. Currently in Kazakhstan there is no specialized laboratory for the analysis of food products, which will allow to sell of products on the international market.

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Commuting, Transportation Flows and the Labor Market in Almaty

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Abstract

Commuting nowadays is a worldwide trend. Due to urban development, cities become larger, creating agglomerations. It leads to broader human mobility. One of the other key thoughts about commuting is the positive impact of commuting flows on creating new workplaces. First, vast commuting flows can make it easy to find appropriate candidates for job vacancies to be filled. Secondly, there is a demand for different goods and services in receiving areas created by commuters. Therefore, by means of local demand, new workplaces can be produced. The study aims to analyze the relationship between commuting flows and the creation of new workplaces in Kazakhstan. Both qualitative and quantitative methods are used in the paper. Secondary research provides and compares existing models of commuting impact on workplaces. Data on the workplaces created in Kazakhstan is collected via the Bureau of National Statistics of the RK. In this research, transportation flows and their influence on the labor market in Almaty were analyzed. According to the results, there is a positive correlation between transport flows and created job opportunities between 2014 and 2019. This study can contribute to existing studies on commuting, especially to studies on urban development in Almaty, since commuting is closely related to the urban topic. The decisions to conduct commuting might differ amongst the citizens, and that is defined by interior and exterior characteristics, including the income level of people, the labor market features, etc.

Keywords: Commuting, Workplace, Labor Market, Transportation Flows, Urban Economy

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1. INTRODUCTION

Commuting is a frequent activity that takes place commonly in larger urban territories and agglomerations. Dwellers residing in the periphery of the agglomeration favor traveling to work that is placed in the central point of agglomerations (Haas & Osland, 2014; Clark et al., 2019).

Migration (i.e., relocation of residence) and commuting illustrate geographically related managing strategies of people altering a contrast in the labor market (Termote, 1980; Fischer et al., 1996; Senega et al., 2014; Zabel, 2012) by overcoming the geographical distance between residence and workplace. Even if both terms are linked theoretically, they range principally in reference to an individual's living place, their regularity, and frequently also the proneness to overcome space. In case the labor market is accessible by commuting, i.e., "a monotonous day-to-day journey from a fix location of the home to a certain location of work" (Johnston et al., 2009), supplies numerous work opportunities, a person is prompt not to relocate. Moreover, it should be noted that commuting includes intraurban and interurban commuting based on whether an employee traverses the hometown boundary on the way to work. For example, if the person's workplace and home are within one city or area borders, and the person does not cross the border, it can be described as intra-urban commuting. While if the person crosses the border, then it is inter-urban commuting (Vontroba, 2020).

Due to the prompt widening of the city areas, the population's disproportionate density clashes with further productivity growth. Spatial opportunities for broadening production are confined, transports are overcrowded, and standards of life worsen due to overpopulation, costly living, pollution, and city noises. Consequently, the city area started to expand intensively – it brought in all new regions and was transfigured into an agglomeration (Carlino & Kerr, 2015; Fang & Yu, 2017).

Another key thought about commuting is the positive impact of commuting flows on creating new workplaces (Russo et al., 2011; Xiao et al., 2021). First, vast commuting flows can make it easy to find appropriate candidates for job vacancies to be filled. Secondly, there is a demand for different goods and services in receiving areas created by commuters. Therefore, by means of local demand, new workplaces can be produced.

Commuting, or specifically the readiness to commute, illustrates a vital component in people's employment and income level, as it straightforwardly influences the geographical dimensions of an individual's labor market. Given this, it introduces additional job offers with a wider wage range (Stigler, 1961) obtainable to a person, but contrary, it offers supplementary expenses associated with commuting. Hence, a person is more seemingly to accept only those job opportunities that hand commuters with sufficient income to defray all financial and non-financial expenses of commuting, which is imaged by the positive correlation between the level of income and commuting (van Ewijk & van Leuvensteijn, 2009; Zabel, 2012).

Therefore, it leads to the research question: What is the impact of commuting on the creation of new workplaces in Kazakhstan? The research hypothesis claims that increased transportation flows leads to a growth in created job opportunities.

The research objective is to analyze the commuting flows and their impact on workplaces.

2. LITERATURE REVIEW

Mainly the theoretical background of this research is the work of Russo et al. (2011) about the positive correlation between commuting flows and creating jobs in receiving areas. Basically, the authors claim that commuters can contribute to the search for potential candidates by employers. Moreover, while conducting commuting, commuters need several services and goods to travel, therefore new workplaces might be created.

Factors, namely, income, labor market, apartment prices, a distance of commuting, etc., have an influence on the choice to conduct commuting and migrate (Reggiani & Nijkamp, 2009; Haas & Osland, 2014). Accordingly, commuters pay particular attention to the costs of commuting. Several academics believe that higher income levels and lower dwelling prices would pay back high commuting costs, justifying it by the perfect market theory (Roback, 1982; Rouwendal & Mulalic, 2021). Contrariwise, other scholars assume that commuting costs cannot be minimized due to the house and labor market imperfections, such as uncertainty, lack of information, and transportation costs (Deschacht & de Bruyne, 2020; Bwire & Zengo, 2020). Accordingly, it is essential to consider the "excess commuting" concept presented by Hamilton and Röell (1982). It refers to the supplementary travel to work expressed by the contrast between the average concrete commute and the minimum achievable average commute, given the territorial configuration of the place of work and household sites (Ma and Banister, 2006; Zhou et al., 2020; Zhang et al., 2021). In other words, the dissimilarity between the real average commute and the abstract commute is specified by a moment when each commuter has a job at the closest feasible place relative to home (Haas & Osland, 2014; Liu et al., 2016).

The core theories of the research are labor market theory (Coombes & Openshaw, 1982; Casado-D´ıaz, 2000; van der Laan & Schalke, 2001); spatial interaction theory (Pooler, 1993; Fischer, 2001; Mossay, 2011); search theory (van Ommeren, 2005; Sanjurjo, 2017). These theories are used in different fields of economy, especially in the urban economy, therefore they can be applied in order to understand commuting patterns and commuting behavior. They are interconnected and interrelated but have their own features and differences (Figure 1).

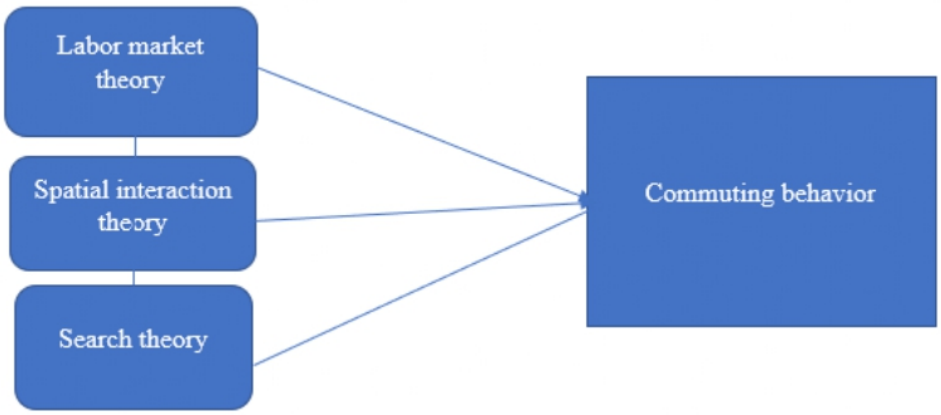

FIGURE 1. Theoretical framework

Source: Compiled by the author based on the literature review

In this case, commuting behavior is a core concept of the research since it is impacted by housing prices, commuting distance, commuting time, etc. (Clark et al., 2003; Sandow, 2010; Beecham et al., 2014). Therefore, the outlined theories explain what factors alter commuting behavior, why, and how it is influenced. Mainly, these theories were developed in the XX century, and recent publications rely on previous theories.

Previously there was research conducted (Kabdesov & Maldynova, 2021) on socio-demographic characteristics of commuting flows in the Almaty region. Within this research, a preliminary pilot survey was conducted. According to the study, commuters mainly experience problems associated with air pollution, city noises, traffic congestion, and fatigue during their travel to work and back home. Moreover, among the issues of moving closer to the place of work or city center, commuters indicated high prices for housing (Seitz, 2021). Noteworthy, lower salaries compared to the salaries of people living downtown, impede renting an apartment or purchasing housing closer to work. Furthermore, the lack of job opportunities in the peripheries necessitates finding jobs in the city center.

Based on the fact that there is a necessity to find a job in the city center, here the gravity model can be applied. This model is used in urban geography based on Newton's law of gravity. Generally, it is used to predict migration flows and the degree of migration interactions within two places, and it is based on the idea that as the significance of one or both places increases, there will also be an increase in movement between them (Rodrigue et al., 2009; Erin et al., 2012).

3. METHODOLOGY

The mixed method is used in the research. However, quantitative analysis is one of the main methods and plays an essential role. Several scholars characterize the research methodology as the comprehensive steps a researcher applies in commencing research work (Leedy & Ormrod 2001; Williams, 2011).

Descriptive statistics are used for providing diagrams, tables, pie charts, and graphs on the socio-demographic characteristics of commuting processes in the Almaty region. Correlation analysis is used for testing hypotheses that are proposed in this research.

To analyze the impact of commuting on creating new workplaces, data from the Bureau National of Statistics is used. The analysis is conducted based on the Almaty city case. The data is about the number of employed people in the Almaty region and the number of registered entities. Moreover, information from Kazakhstan's Electronic Labor Exchange database is used for the analysis.

Since there is a lack of information on the official number of commuter flow in the country, there is an analysis of the employed people in the Almaty region and published vacancies in the Electronic Labor Exchange database.

4. FINDINGS AND DISCUSSION

Whereas the work of Russo et al. (2011) is based on the unique dataset covering commuter flows following the long timespan from 1996 to 2005, in Kazakhstan there are no official statistics on commuting flows. Therefore, the dataset on transportation flows

is used as an indirect indicator of commuter flows. Moreover, the dataset on the registered entities and vacancies in Almaty is also used.

In this research it is assumed that an increase in transportation flows within Almaty city has a correlation with the registered entities, therefore correlation analysis of these two variables was conducted. Therefore, the following hypotheses can be formulated:

Hypothesis 0: there is no correlation between transportation flows and registered entities.

Hypothesis 1: transportation flows positively correlate with registered entities.

As it was mentioned, commuters need services and goods during travel to work, especially transportation. Hence, the increase in commuting flows can create the need in increasing public and private transport usage.

In order to analyze the correlation, there is a visual representation of transport flows (Figure 2) and registered entities (Figure 2).

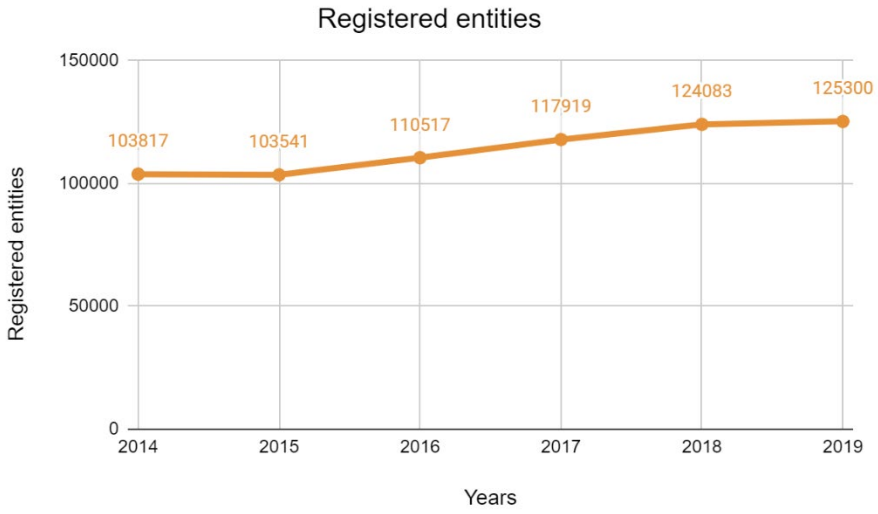

FIGURE 2. Official registered entities

Source: Compiled by the author based on the data from the Bureau of National Statistics (2022)

The data is taken from the Bureau National of Statistics. Due to the Covid-19 pandemic and lockdowns influence, data before the pandemic is used. After the beginning of Covid-19, there was a decrease in transportation flow. As it was on the above-depicted figure, a slight stable increase in the registered entities can be seen. Nevertheless, overall transportation flows are presented in Figure 3.

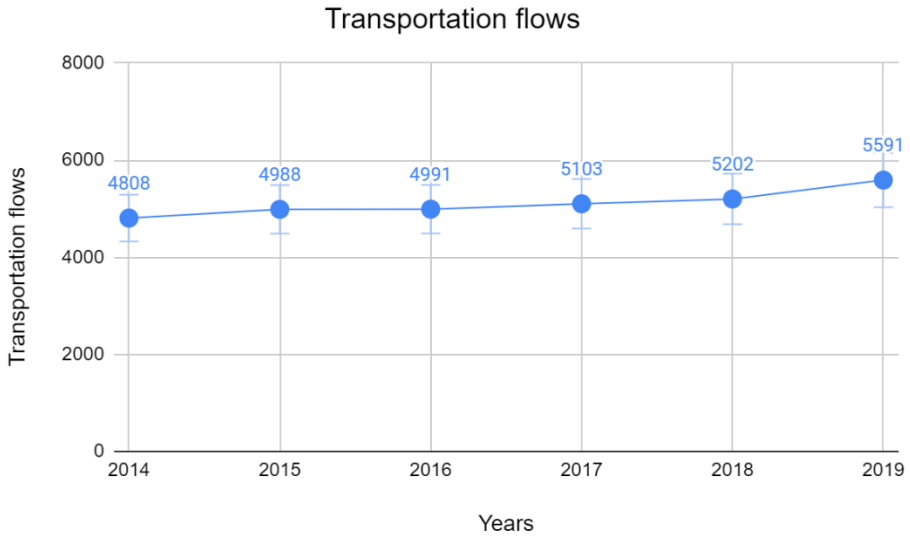

FIGURE 3. Overall transportation flows

Source: Compiled by the author based on the Bureau of National Statistics (2022)

In order to check the research hypotheses, correlation analysis using SPSS software is used. Due to the fact that the sample is small, it is assumed that the results are significant at 0.05 (see Table 1).

TABLE 1. Correlation of the registered entities and transportation flows

Correlations			
		Registered entities	Transportation flows
Registered entities	Pearson Correlation	1	0,855*
	Sig. (2-tailed)		0,030
	Sum of Squares and Cross-products	358546893339333310,000	11123481984666,666
	Covariance	71709378667866664,000	2224696396933,333
	N	6	6
Transportation flows	Pearson Correlation	0,855*	1
	Sig. (2-tailed)	0,030	
	Sum of Squares and Cross-products	11123481984666,666	472457020,833
	Covariance	2224696396933,333	94491404,167
	N	6	6
*. Correlation is significant at the 0.05 level (2-tailed). Note – Compiled by the author with SPSS software			

According to the results of the correlation analysis, r is 0.855 indicating a strong positive correlation. Moreover, the significance level is 0,03, meaning that the null hypothesis is rejected, and the alternative hypothesis is accepted. The scatter plot of the correlation is presented in Figure 4. Since the number of observations is small, it is

complicated to generalize the results, however, the result provides additional useful information for future analysis (see Figure 4).

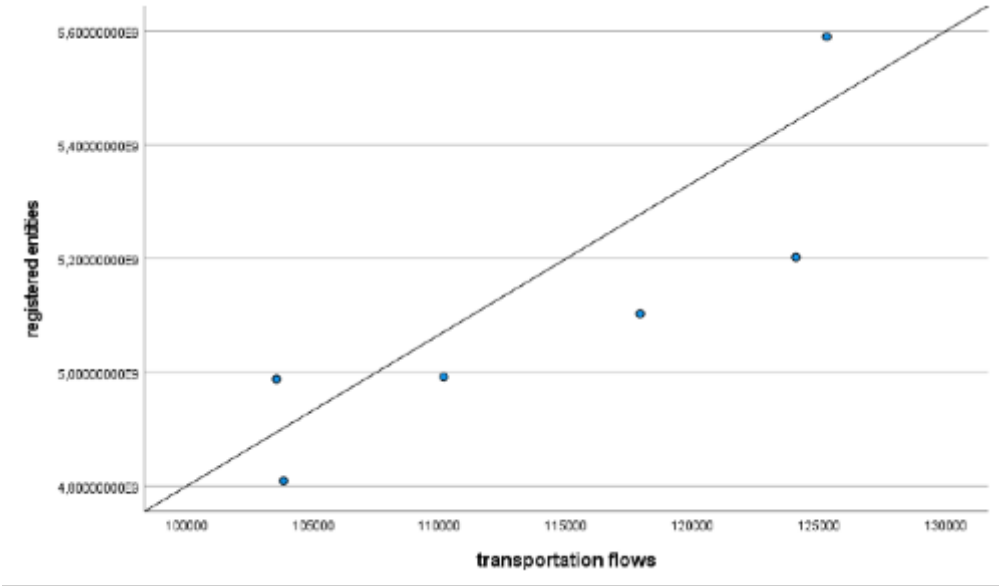

FIGURE 4. The number of vacancies in Almaty
Source: Compiled by the author with SPSS software

However, attention should also be paid to labor market vacancies. However, the number of vacancies decreased from 2020 to 2021. According to Kazakhstan's Electronic Labor Exchange database, there is a vast increase in created vacancies in Almaty from 2017 to 2020 (see Figure 5).

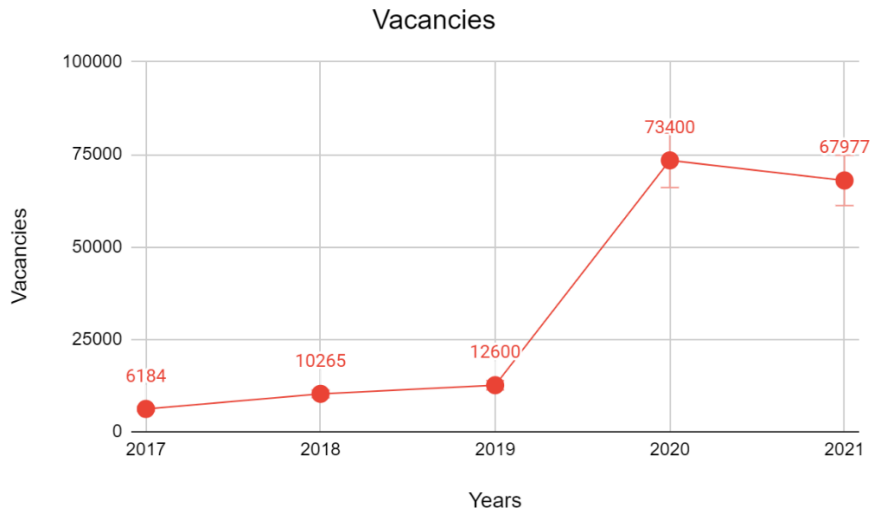

FIGURE 5. Scatter plot of the correlation.
Source: Compiled by the author based on Kazakhstan's Electronic Labor Exchange database data

5. CONCLUSIONS

This research analyzed transportation flows and their influence on the labor market. According to the results, there is a positive correlation between transport flows and registered entities between 2014 and 2019. This period was taken due to the Covid-19 pandemic's influence. Descriptive statistics of created vacancies in Almaty are also presented. However, due to the lack of official data on commuting flow and information on the created vacancies for previous years, it is complicated to broadly analyze the influence of commuting on the creation of workplaces. In October 2021 new census was conducted in Kazakhstan (How Population Census Will Be Conducted in 2021, 2021). Therefore this relevant information can be useful for future research. Statistical data on commuting is necessary when compiling the balance of labor resources of a city or region, when determining the resource and distribution parts of the reporting and planned territorial balance of labor resources. Information about the pendulum migration is also important when planning and assessing the actual load on the territorial infrastructure when determining the demand for transport services to the population.

According to the Strategy of Kazakhstan-2050 and Interregional Action Plan for the Development of the Almaty Agglomeration until 2030, it is crucial to ensure human development, create single transport and logistic complex, and ensure environmental sustainability, as well as to provide sustainable urbanization. Even if there is some mention of the word “commuting” in the Action Plan, there are no exact regulation methods of commuting. Moreover, that problem is worsening because it is unclear which organ would control commuting: Almaty city administration or Almaty region administration. Hence, if the government is willing to ensure human, transport, and logistic development and maintain a sustainable urbanization rate, appropriate public policy measures should be implemented. Therefore, studying commuting from academic and public policy perspectives is crucial. Furthermore, since the commuting patterns are most often traced in the Almaty region, with the largest population and more developed infrastructure among other cities, it was chosen to study commuting in this region.

This paper contributes to the present studies about commuting and the labor market. Moreover, it might assist researchers in future studies. Especially considering the fact that Almaty agglomeration has been enlarging and including new territories, new changes in the labor market and commuting patterns might appear.

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Original article

Review of Foreign Experience in the Performance Audit of Tax and Customs Administration

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Abstract

President of Kazakhstan Kassym-Jomart Tokayev's State of the Nation Address, September 1, 2020 "Kazakhstan in a new reality: time for action" he stressed the need and importance of a fair redistribution of national income, thereby developing a tax policy that is understandable to all citizens of the country. Digitization of the tax and customs sectors will significantly help fight against the "shadow economy" in all its manifestations. The new budget planning system should ensure national priorities and become a subordinate part of the national planning system. Conducting an audit of the effectiveness of tax and customs administration is one of the main areas of external state audit, thereby determining the relevance of the research topic. Given that the purpose of the public audit is to improve the efficiency of management and use of budgetary funds, assets of the state, and entities of the quasi-public sector, it became necessary to create a methodological framework for public audit that complies with the guidelines of the Lima Declaration and international audit standards. Additionally, as well as improve the legislative and methodological framework of the current system of public audits. The article deals with the issue of performance audit of tax and customs administration, as well as foreign experience in performance audit of tax and customs administration. To achieve these goals, the topic of the concept of tax and customs administration is disclosed. Another resolved issue is foreign experience in tax and customs administration performance audits.

Keywords: Tax, Customs Administration, Customs Bodies, Administrative Expenses, Tax Authorities, Taxpayers

SCSTI: 06.75.73
JEL Code: E62, G28, M42, M48

1. INTRODUCTION

President of Kazakhstan Kassym-Jomart Tokayev's State of the Nation Address, September 1, 2020 "Kazakhstan in a new reality: time for action" he stressed the need and importance of a fair redistribution of national income, thereby developing a tax policy that is understandable to all citizens of the country. At the same time, tax administration is complex and coercive in nature. The message also emphasizes the need to diversify tax rates as an additional lever for diversifying the economy and supplementing the budget. International taxation standards require special attention in order to maximize the flow of foreign investments to Kazakhstan and profitable reinvestment. In addition, according to experts, GDP almost a third of them are in shadow countries - great potential for increasing budget revenues. Digitization of the tax and customs sectors will significantly help in the fight against the "shadow economy" in all its manifestations. The new budget planning system should ensure national priorities and become a subordinate part of the national planning system.

According to the results of the accounting committee, as of January 1, 2022, 1,741,813 legal entities and private entrepreneurs were registered in Kazakhstan. There is an increase of 4.8% compared to last year (in 2020 - 1,661,469 legal entities and private entrepreneurs). 104,633 business entities are VAT payers, which is 4.6% more than last year (100,044 in 2020). 343 business entities are included in the list of taxpayers subject to the monitoring of large taxpayers approved by order No. 1241 of the Minister of Finance of the Republic of Kazakhstan dated December 28, 2020. The ratio to GDP in the last five years is as follows.

Tax revenues to the National Fund for 2021 amounted to 2,605.1 billion tenge, providing an increase of 86.0% or 1204.2 billion tenge compared to 2020. The tax arrears to the consolidated budget on 01.01.22 amounted to 814.9 billion tenge, which was 6.2% of the revenues to the consolidated budget. In 2020, this figure was 2.7%. According to the State Revenue Committee, in 2021 additional revenues in the amount of 683.6 billion tenge are planned for the republican budget due to tax and customs administration. As we can see, the issue of improvement and development of the performance audit of tax and customs administration of the state audit is a topical topic today. Conducting a performance audit of tax and customs administration is one of the main areas of external state audit, thereby determining the relevance of the research topic. Given that the purpose of the public audit is to improve the efficiency of management and use of budgetary funds, assets of the state, and entities of the quasi-public sector, it became necessary to create a methodological framework for public audit that complies with the guidelines of the Lima Declaration and international audit standards. Additionally, as well as improve the legislative and methodological framework of the current system of public audits.

In our article, we will consider the issue of performance audit of tax and customs administration, as well as foreign experience in auditing the effectiveness of tax and customs administration. To achieve these goals, we must open the topic of the concept of tax and customs administration, as well as the audit of their effectiveness. Another issue to be addressed is a foreign experience in tax and customs administration performance audits.

2. LITERATURE REVIEW

The concept of "tax administration" is relatively new to the Kazakh taxation system. Among the authors, there is no consensus on what "tax administration" is Mamyrov (2013) defines it as strengthened tax administration, regulated by regulations in the field of taxation, which ensures the taxation of particular objects in a market economy. In turn, Mishenina and Maksimova (2012) define tax administration as a set of procedures that provide public administration in the field of taxation. Tax administration has a targeted focus on the implementation of tax legislation. Undoubtedly, tax administration is considered from the point of view of its organizational function, the work of tax authorities to ensure the receipt of tax revenues in the budget, and tax control (Alikulova et al., 2021).

According to Grishchenko (2019) position, tax administration is much broader than the concept of "tax control" it includes not only registration, accounting, control of taxpayers and objects of taxation but is also associated with an analysis of the effectiveness of taxation, tax burden, development of changes in the tax system. Therefore, tax administration should be distinguished from the concept of "tax administration" which is indicated in the works of Ugryumova (2008) where tax administration is proposed to be considered as the development of "...systematized and orderly procedures for solving problems that arise in the practice of implementing the current mechanism for calculating and paying a specific tax».

Thus, we can conclude that tax administration is a specific organizational technology, which is aimed at:

– Control over the timeliness of filing tax reports on tax, payment of tax by the taxpayer;

– Obtaining information about the object of taxation from other sources (for example, traffic police, Commercial bank, OFD), including for the calculation of taxes (for individuals) and for tax control;

– Conducting in-house tax audits regarding the correctness of the calculation and payment of this tax (if necessary for field tax audits).

At the same time, tax accounting of taxpayers is not tax administration but only the basis for subsequent administration and control. In a similar sense, it is worth considering the acceptance of financial statements, which is also maintained by the tax authority (it is not aimed at administering any particular tax). That is why it is proposed to consider tax administration:

– In a broad sense (as the functioning and activities of specialized authorities for the implementation and improvement of tax legislation);

– in a narrow sense (as the work of the tax authority related to accounting for taxpayers, administration of specific types of taxes, general control over compliance by taxpayers with tax and related legislation: on cash transactions, turnover of alcoholic and other products, including financial reporting).

Given the above, we consider it necessary to display the broad and narrow interpretation of the term "tax administration". In a broad sense, this term is presented in the form of a structural-logical diagram in Figure 1.

The model shown in figure 1 works as a comprehensive tax management system in the country. The work of the tax authorities on the implementation of tax policy and enforcement of tax legislation is only one of the links in this system. Taking into account the above and summarizing scientific research on the nature, functions, goals, and objectives of tax administration, we can conclude that it can be considered in a broad and narrow sense. In a broad sense, tax administration is comprehensive management of the tax system by the state (development of taxation, ensuring tax receipts, analysis, and change of the taxation system) (Fedorov et al., 2019).

Based on the importance of the effective work of the tax authorities, the European Commission has published Fiscal Plans (Fiscal blueprints), which provide recommendations for improving the work of the tax authorities. Based on these plans, each member state of the European Union, together with the Intra-European Organization of tax administrations, has taken measures to improve tax administration. The plan itself consists of five groups: 1) Structure; 2) Human and behavioral problems; 3) Systems and operation; 4) Service for taxpayers; 5) Support.

The International Monetary Fund and the OECD, in turn, among the important features that tax authorities should contain, include:

1) One body that collects direct and indirect taxes;

2) The body must have a sufficient level of autonomy, most often a semi-autonomous body, in terms of organization and planning, budget, performance indicators, human resources;

3) there should be a separate department that would deal with the largest taxpayers;

4) The legal framework that governs all taxes;

5) An extensive network of offices to cover mass and economic aspects with specialists in the regions (Serikova et al., 2018).

In a narrow sense, tax administration is the activity of tax authorities aimed at ensuring the implementation of tax legislation by legal entities and individuals. It includes tax accounting, acceptance of tax and financial reporting, and in some cases the calculation of taxes, control over reporting and payment of taxes, and other measures that are also closely related to ensuring the receipt of taxes in the budget system, the implementation of tax legislation. Tax control is closely related to tax administration, it is possible in the presence of a tax administration system and is considered as its element. As part of the study, a comparative analysis of the regulatory and methodological base of the Supreme Financial Control Bodies of the studied foreign countries was carried out.

3. METHODOLOGY

The research methodology includes general scientific, private, empirical and theoretical research methods using the data of the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan, International Rating Agencies, the United Nations, etc. The method of graphical representation of data is used as a statistical tool.

4. FINDINGS AND DISCUSSION

Article 12 of the Lima Declaration provides for the Supreme Audit Institutions to conduct an expert assessment of the provisions of draft legislative acts. In the studied foreign countries, this norm is observed. An expert assessment of draft laws involves an assessment of the consequences to which its adoption may lead. The Supreme Audit Institutions of the countries in question pay special attention to the evaluation of draft legislation providing for tax exemptions and incentives, since one of the generally accepted powers of the Supreme Audit Institutions is to control the effectiveness and legality of providing tax exemptions and incentives. In foreign countries, tax exemptions and benefits mean tax expenses, in some countries, for example, in Germany, the concept of "tax subsidies" is used.

The methodology for assessing tax incentives in the studied countries is implied separately for each type of tax, based on the specificity of taxation. According to the generally accepted methodology, there are three approaches to the valuation of tax expenses:

1. The method of revenue forgone estimates tax expenses by the number of budget losses incurred due to exemption or the introduction of benefits. This method is the most reliable method for assessing the level of support provided to taxpayers through the tax system.

2. The method of revenue gain estimates tax expenditures by the amount that the budget would receive additionally if the norms of benefits or exemptions were canceled. The method is less reliable in estimating tax expenses, since when assessing cases of cancellation of existing benefits, such factors as a change in the behavior of the taxpayer, the date of cancellation, the impact of the cancellation of benefits on the taxation of other taxes, etc., may not be taken into account.

3. The method of outlay equivalence estimates tax expenses in the form of the sum of the direct expenses of the taxpayer before taxation. This method is applicable under the condition that direct expenses under the relevant budget program replace tax expenses and the taxpayer's income after taxation, provided that the benefit is replaced by a transfer, must be equal to the income provided that the benefit is applied.

To understand the difference between the three methods for estimating tax expenditures, one can cite the data of a study by the Inter-American Development Bank (IDB), based on the results of the data, the Methodology for Estimating Tax Expenditures was developed based on the methods of the OECD countries (Sembiyeva et al., 2020). According to this Methodology, the above methods correspond to three different concepts, which can be described as lost profits, recovered revenues, and equivalent direct costs. Before explaining the difference between the two, it should be noted that the application of tax expenditures causes changes in the behavior of taxpayers. For example, suppose the income received through various instruments is exempt from taxation. In that case, the demand for these instruments will be higher, and, accordingly, the yield on them will be higher than the yield, provided that preferential treatment is not applied. Similarly, if the income deduction is eliminated, it is possible that taxpayers can more effectively use other deductions recognized by law as a way to compensate for the lost advantage. The recognition of these and other taxpayer behavioral changes in the assessment of tax

expenditures clearly indicates the differences between the three methods mentioned above.

The lost profits method measures the loss of income that occurs after the tax expense has been introduced. It assumes that there is no change in the behavior of the taxpayer.

The recovered income method estimates the additional income that must be generated by eliminating tax expenses. Unlike the lost profits method, this method (also known as ex-ante measurement) takes into account changes in taxpayer behavior. In practice, the application of this method is very limited, since it requires estimates of the elasticity of supply and demand for goods or incomes that favor special treatment. This method also needs to take into account changes in behavior associated with tax evasion.

The equivalent direct cost method estimates a subsidy or transfer that leaves taxpayers with an income (net of taxes) similar to what they would receive from the existence of a tax expense. In order to understand the differences between this method and the previous ones, it is necessary to note the difference between two types of tax expenditure: "tax subsidies" and "tax transfers". The first of these are those that are associated with the purchase of certain goods, for example, exemption from VAT. The second is those that are associated with lower tax rates. The equivalent direct cost method accepts the fact that transfers usually form part of taxable income. Thus, if tax expense is to be assessed on the same basis as a direct transfer, then the amount of tax that would affect said transfer must be added. On the other hand, there is no need to make this adjustment for those tax expenditures indicated by tax subsidies since, in most cases, direct subsidies do not increase the taxable income of taxpayers.

We give an example of a comparison of three methods for estimating tax expenditures. Pre-tax income is assumed to be 1,000, with an effective deduction of 200. Taxable income is subject to a scale of two cap rates: 20 percent for income up to 800 and 30 percent for income above that cap. Using this lost profits method, the tax expense is estimated as the effective deduction multiplied by the marginal rates that would be effectively levied on the highest income if the tax credit were removed, i.e., 200 x 30% = 60.

The restored income method takes into account an assumed change in behavior whereby household spending subject to VAT will be reduced by 60, which means that VAT collection will decrease by 60 / 1.1 x 10 percent = 5.5, resulting in an effective tax spending 60 - 5.5 = 54.5.

TABLE 1. Comparison of three methods for estimating tax expenditures (Subject to taxation of the equivalent transfer amount)

Indicators	**With tax expenses**	**No tax expense**		
		The method of revenue forgone	**The method of revenue gain**	**The method of outlay equivalence**
1	**2**	**3**	**4**	**5**
1. Income before taxes	1000	1000	1000	1000

1	2	3	4	5
2. Effective Deduction	200.0	0	0	0
3. Equivalent direct costs	0	0	0	85.7
4. Income (1 - 2 + 3)	800	1000	1000	1085.7
5. Income tax rate	20%	30%	30%	30%
6. Income tax (with an income of 800, the rate is 20%, over 800-30%)	160.0	220.0	220.0	245.7
7. Income after taxes (1 + 3 - 6)	840.0	780.0	780.0	840.0
8. Highest Income Tax		60.0	60.0	85.7
9.Change in taxpayer behavior		0.0	5.5	0.0
10. Total tax expenses (8 - 9)		60.0	50.5	85.7
Note: Compiled by authors				

Finally, using the direct cost equivalent method, the marginal rates that would effectively be levied on the highest income if the tax credit were removed should be applied to the deductible amount. Additionally, increase the result of the amount of tax that would affect the equivalent of the expense amount, or in this case, 200 x 30% / (100%-30%) = 85.7. The transfer of value would subsequently result in an after-tax income of 840, which is in line with the tax expense situation (line 7 of Table 1).

If the equivalent transfer were tax-free, or if it were a subsidy-type tax expense, the equivalent direct cost method would yield exactly the same result as the lost profits method. This situation can be observed in the following table. Since the equivalent direct cost is not subject to income tax, its value is estimated as a deduction multiplied by the marginal rate that would have affected the taxpayer had it been excluded, i.e., 200 x 30% = 60 (Table 2).

TABLE 2. Comparison of three methods for estimating tax expenditures (Subject to the exclusion of taxation of the equivalent transfer amount)

Indicators	With tax expenses	No tax expense		
		The method of revenue forgone	The method of revenue gain	The method of outlay equivalence
1	2	3	4	5
1. Income before taxes	1000	1000	1000	1000
2. Effective Deduction	200.0	0	0	0

1	2	3	4	5
3. Equivalent direct costs	800	1000	1000	1000
4. Income (1 - 2 + 3)	20%	30%	30%	30%
5. Income tax rate	160.0	220.0	220.0	220
6. Income tax (with an income of 800, the rate is 20%, over 800-30%)	0	0	0	60
7. Income after taxes (1 + 3 - 6)	840	780	780	840
8. Highest Income Tax	0	60	60	60
9.Change in taxpayer behavior	0	0	5.5	0
10. Total tax expenses (8 - 9)	0	60	54.5	60
Note: Compiled by authors				

It should be recognized that in order to correctly determine tax expenditures, it is necessary to compile a list of all tax exemptions associated with various taxes within the tax system. It is also necessary to determine for which taxes the tax expense should be measured. It is recommended to make this list as complete as possible at this stage.

Below is a table of definitions and methods for measuring tax expenditures for selected OECD countries, as well as for Belgium, Germany, and France (Alibekova et al., 2021). No information is available on the definition and measurement of tax expenditures for New Zealand, Denmark, Sweden, and Singapore (Table 3).

TABLE 3. Determination and measurement of tax expenditures for selected OECD countries

Country	Definition and measurement of tax expenditures	
	Determination of tax expenses	Methods for estimating tax expenses
1	2	3
Australia	Tax provisions that provide for the collection of taxes for certain categories of taxpayer or certain types of activities that differ from the structure of the selected benchmark	The method of revenue forgone on an accrued method
Belgium	Income forgone due to the use of tax exemptions in the form of exceptions from the Tax Code, which are provided to certain taxpayers or economic, social or cultural activities and which can be replaced by direct subsidies	The method of revenue forgone on a cash basis
Canada	Deviations in relation to the control tax	The method of revenue forgone on a cash basis

1	2	3
Germany	There is no clear definition. References to benefits received by enterprises or sectors of the economy As defined by the SAI of Germany, tax expenditures are special exemption rules that help taxpayers and at the same time reduce the government's tax revenues.	The method of revenue forgone on a cash basis
France	Legal provisions, the implementation of which results in a reduction in tax revenue for the state compared to the application of the provisions or norms that are the principle of the basic tax calculation	The method of revenue forgone on a cash basis
Italy	Favorable tax regime, which is an exception to the principles	The method of revenue forgone for accrued method
Note: Compiled by authors		

In many foreign countries, the requirement to submit a Report on tax expenses (subsidies) to the relevant legislative bodies should be legally fixed. Of the OECD countries that report on tax spending, at least nine have noted the importance of reporting and made it a legal requirement, these countries include Belgium, France, and Germany. In addition, most of these countries directly link the reporting of tax expenditures to the budget process (Karabayev et al., 2021). In general, most OECD countries that report tax expenditure do so for personal and corporate income taxes, as well as value-added tax, if applicable. Belgium, France, and Germany report tax expenditures on most direct and indirect central government taxes (Zasko & Shakirova, 2014).

TABLE 4. Reporting tax expenditures in OECD countries

Country	Purpose / use	Legal require ment	Relations with a budget	Periodi city	Assessment method
1	2	3	4	5	6
Australia	Facilitating the assessment of tax costs along with direct costs;	Legal must	Separate government budget summary document	Annuall y	The method of revenue forgone on an accrued method
Belgium	Assistance in the development of the tax system; Public information.	Legal must	Annex to the budget	Annuall y	The method of revenue forgone on a cash basis
Denmark	Assessing the impact of various ax measures on income			During thematic reviews	The method of revenue forgone

1	2	3	4	5	6
Canada	Analysis of federal income tax and VAT systems;	No mandatory requirements	Not tied to the budget process, but for pre-budget consultations	Annually	The method of revenue forgone on a cash basis
France	Pre-budget consultations	Legal must	Attached to the budget	Annually	The method of revenue forgone on a cash basis
Germany	Facilitating the budget process	Legal must	Within the budget called "Subsidies Report"	Biennial	The method of revenue forgone on a cash basis
Italy	Reducing subsidies / costs	Legal must	Not related to the budget process or not attached to the budget document. But this is an independent document.	Periodic	The method of revenue forgone on an accrued method
Netherlands	Assessment of tax expenditures based on their value, objective criteria and their compliance with the budget;	Required, but not by law	Attached to the Budget Memorandum. Not directly related to the budget, but serves as an additional reference for Parliament.	Annually	The method of revenue forgone on an accrued method
USA	Assessment of tax expenditures based on their value, objective criteria and their compliance with the budget;	Legal must	As part of annual budget documents, but not integrated into the budget process.	Annually	The method of revenue forgone , The method of revenue and The method of outlay equivalence on a cash basis
Sweden				Thematic checks	
Note: Compiled by authors					

The table below details the reporting of tax expenditures in OECD countries (according to the World Bank), including Belgium, Germany, and France. Data not available for New Zealand and Singapore (Table 4)

Along with this, within the framework of the ongoing study, another significant indicator of the effectiveness of tax administration in foreign countries, "tax gaps", was studied. The tax gap is a value showing the difference between the amounts actually received by the budget and potential tax revenues (tax potential) (Serikova & Sembiyeva, 2020).

In Belgium, the assessment of the tax gap is carried out by the Ministry of Finance, in Germany the assessment conducted by the IFO Institute (Leibniz Institute for Economic Research at the Munich Institute of Economics) is used. In international practice, two methods are used to determine the tax gap. The methodology for calculating these lost taxes is available on the website of the International Monetary Fund (hereinafter referred to as the IMF) and is used by many OECD member countries. As part of the study, for Germany and Denmark, a methodology for calculating tax gaps according to the "top-down" scheme is given using the example of VAT (as the main source of the budget). So, in Denmark, the RA-GAP model is used. The model analyzes the difference between potential tax revenues and actual VAT revenues to the budget. Below is a diagram of methods for determining the VAT tax gap (see Figure 1).

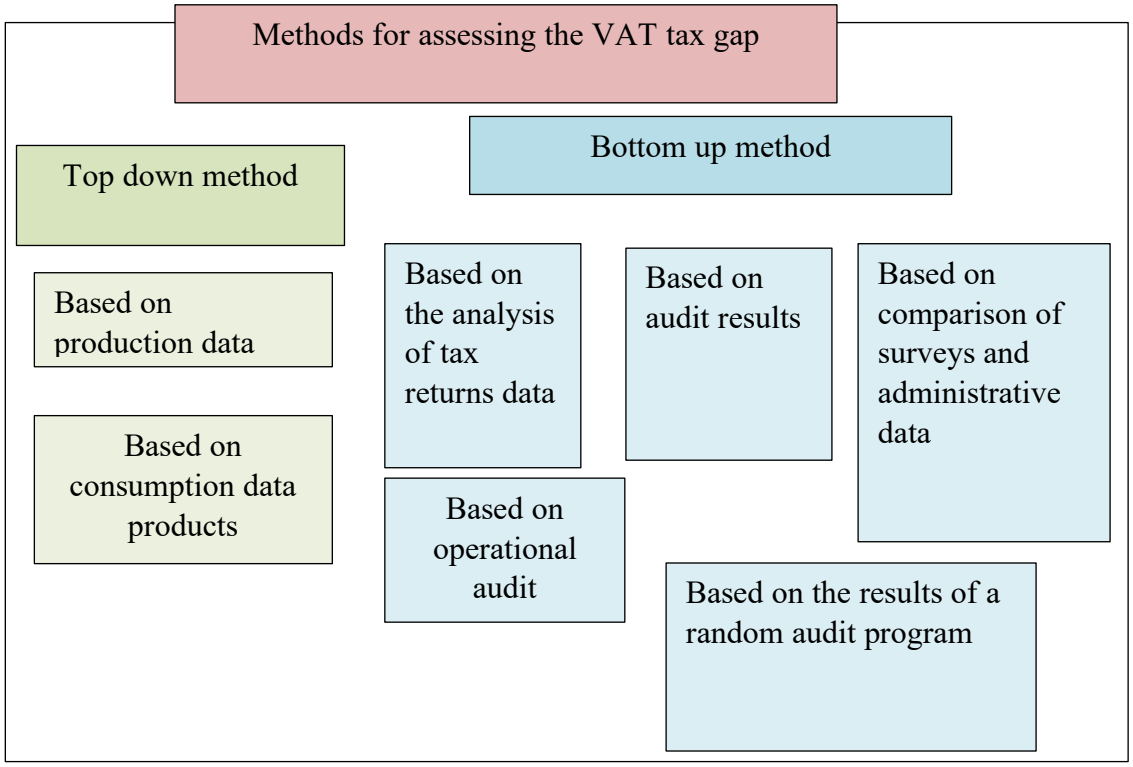

FIGURE 1. Scheme of methods for assessing the VAT tax gap
Note: Compiled by authors

According to the top-down method, the tax gap calculation is based on the use of macroeconomic indicators and national accounts that characterize the entire economy of a country or a separate region (for example, the EU). This method theoretically includes

tax as the whole base, thus requiring less time and relatively few resources (Sembiyeva et al., 2021).

The "bottom-up" method implies an assessment of the tax gap for different groups of taxpayers. The method involves the use of information on compliance with tax laws based on the results of control measures. This method is based on the results of selective audits of taxpayers with high tax risks, studies of individual sectors of the economy, and risk assessments for them. With this method, it is difficult to assess the non-observed economy and determine the losses of the state budget caused by tax evasion, fraud, since random checks are carried out within the framework of registered taxpayers. For example, the difference between the additional amounts accrued based on the results of a tax audit and those recovered is an element of the tax gap. To assess this difference, the bottom-up method is applicable (Gemmell et al., 2014)

Thus, the top-down assessment of the tax gap gives an overall estimate, and it is impossible to determine which sectors of the economy or discrepancies are the sources of the tax gap. Under the bottom-up approach, individual data on taxpayers can provide detailed information on sectors of the economy and non-compliance with tax laws.

In case of sufficiency of resources, combining methods for assessing the tax gap can be recommended, which will allow comparing the results. In addition, within the framework of the study, the forms of tax administration in the tax authorities of the countries under consideration were studied. In terms of tax administration, different countries are at different levels of development. The first group is formed by countries with a complex organizational structure of tax authorities - this includes Germany and France (Gemmell et al., 2014). The second group consists of countries with relatively compact structures of tax authorities - for example, Belgium, Denmark, and Sweden. The third group includes mainly countries with a relatively small number of taxpayers compared to the first two groups, the staff of the tax authorities in them can be up to 2 thousand employees.

Features of building organizational structures of tax authorities in different countries of the world are as follows. “First, the tax authorities may have a single nationwide structure (Germany, France, and Sweden) (Hasseldine, 2014). Secondly, the tax authorities may be part of the state's general financial management system or operate on a relatively autonomous basis. For example, in Germany the tax authorities operate as subdivisions of the Ministry of Finance, while in Sweden, they act as independent government agencies that operate independently of the Ministry of Finance. Thirdly, the traditional structure of the system of tax authorities is different - types of taxes (indirect taxes, income taxes, customs duties, immovable property taxation) and combined. For example, in Sweden, a single tax authority collects all indirect taxes and customs duties.

“In the countries studied by us, the principles of tax administration are laid down in tax laws. For example, the General Tax Code of France is a codified act, which is a set of laws. The procedures for implementing tax control are given in the Book of Tax Procedures, which is the procedural tax code of France” (Sembiyeva, 2020). “German tax legislation consists of a set of laws: tax laws and 15 special laws. It should be highlighted in the tax legislation "Taxation Procedure", which consists of 415 articles, containing, among other things, the rules on criminal legal violations, which represent the legal basis for countering various forms of tax evasion in Germany” (Serikova, 2020).

Tax audits in Germany are carried out in accordance with the Financial Audit Regulation approved by the German Ministry of Finance in agreement with the German Bundesrat, and are carried out in order to establish and assess the circumstances of the case that are significant for taxation, and not to find additional taxes. Despite the difference in tax laws in the countries under consideration, in the implementation of tax control, the actions of tax and customs services are common in terms of registering taxpayers, conducting tax audits, simplifying the work of tax and customs authorities, considering pre-trial appeals of tax disputes, etc. One of the important elements of tax administration in these countries is registering taxpayers and assigning identification numbers to them.

For this purpose, the ratio of the number of registered taxpayers to the total population and to the number of able-bodied population is estimated. Thus, in Belgium and France, the registered population is considered quite high (more than half). In Germany, not all able-bodied individuals are registered as taxpayers, as registration is not universal.

According to paragraph two of article 20 of the Lima Declaration, "when checking compliance with tax laws, the supreme audit institution should also study the organization of the work of tax services and the efficiency of tax collection, the implementation of the revenue plan and, if necessary, should make proposals for improving the relevant legislation."

An assessment of the current legislation to identify gaps and inconsistencies is carried out in all countries studied. In many foreign countries, the organizational and functional structure of the tax authorities provides for a combination of functions for the administration of tax and customs payments (a mixed type of structure), for example, in Belgium. In almost all countries under consideration, SAI auditors monitor the quality of services provided by the tax and customs authorities. Therefore, for example, in New Zealand, an audit of the efficiency of the work of the tax authority is carried out in order to simplify its work, while in Denmark they monitor the productivity of the work of the tax authority. The simplification of the work and the productivity of the tax authorities themselves is directly related to the receipt of taxes. As noted above, simplifying operations, more open policies, and clarifying complex tax laws is a more effective way to deal with tax evasion than dealing with taxpayers who are already in arrears. This is because the taxpayer associates tax payments with "costs". The costs in this case are not only cash payments for taxes, but also complex and confusing legislation, bureaucracy (incorrectly completed form, etc.), fines, unavailability of consultants to explain tax obligations, etc. (Zhussipova, et al., 2019). The role of the tax authority is not only to reduce the costs of the tax authority, but also to reduce the costs of taxpayers.

5. CONCLUSIONS

Summing up, tax and customs administration is one of the most critical levers of public administration, ensuring the republic's stable economic development. Based on this, it can be concluded that the quality of tax administration depends not only on the collection of taxes and the functioning of the economic system but also on the stable economic development of the republic.

Based on this, it can be concluded that the quality of tax administration depends not only on the collection of taxes and the functioning of the economic system but also on the stable economic development of the republic. The performance audit is a type of audit activity widespread abroad and developing in our country. It aims to express an audit opinion on the effectiveness, efficiency and effectiveness of financial and economic processes, management processes, and service programs in the public and private sectors. In one of the first works in the domestic literature, the efficiency audit is defined as a systematic, targeted and organized process of obtaining objective data on the efficiency, effectiveness, and efficiency of the audited state body's activities and mutual verification.

Thus, the results of a study of the experience of individual foreign countries have shown that the powers vested in the SAIs of these countries and approaches to assessing the effectiveness of tax and customs administration have standard features and their characteristics. In this regard, when forming methodological guidelines for conducting a performance audit of tax and customs administration, those results of the study that, in our opinion, are acceptable for Kazakhstan will be accepted.

The study of the international experience of SAIs in conducting performance audits of tax and customs administration allowed us to identify general trends in the conduct of performance audits by the Supreme Audit Institutions of these countries, namely:

- The provisions of the current legislative acts are assessed in order to detect gaps and inconsistencies and, if necessary, proposals are made to improve the legislation and simplify it;
- An expert assessment of draft legislative acts, including those providing for tax exemptions and benefits, is carried out;
- the provision of legality and effectiveness of tax exemptions and benefits is monitored, and for this purpose the indicator “tax expenses (subsidies)” is assessed;
- The indicator "tax gaps" is estimated;
- assesses the quality of services provided by tax and customs authorities, the adoption of measures to simplify the work of tax and customs services.

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Economic Mechanisms to Overcome the Vulnerability of the Economy and Social Sphere of Strategically Important Settlements of Kazakhstan

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Abstract

In Kazakhstan, there is an urgent need to develop depressed settlements, which have their own characteristics associated with the historically established heterogeneity of the location of industries and deep differentiation in terms of socio-economic potential. Urban agglomerations, city centers, regions with raw material extractive industries, whose products are in demand on the global market, have best adapted to a market economy. As a result, many settlements in Kazakhstan turned out to be, as a rule, less developed and competitive, and even worse socially vulnerable. In addition, the COVID-19 pandemic has significantly changed the structure and level of their development, revealed potential vulnerability issues, especially in small communities where there are no resources and materials to manage these consequences. The severity of these shocks will depend on the development of effective measures to address inequalities in strategically important communities. The main purpose of this article is to provide economic mechanisms to overcome the vulnerability of the economy and the social sphere of strategically important settlements in Kazakhstan. Estimated indicators in this study are based on the socio-economic indicator of Zhambyl, North Kazakhstan, East Kazakhstan, West Kazakhstan, Atyrau and Mangystau regions for 2009-2020. The results of this study show that there is a significant disparity between settlements in the regions of Kazakhstan in terms of such factors as the level and quality of life. Most of the regional problems faced by the most vulnerable communities are widespread and systemic. Socio-economic problems, lack of resources, low level of industrial production and lack of state support are the main reasons for the vulnerability and depression of the studied settlements.

Keywords: Regional Economy, Economic Mechanism, Economic Vulnerability, Social Sphere, Settlements
SCSTI: 06.61.33
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1. INTRODUCTION

Vulnerability is the ability of a system to be permanently breached. When an ecosystem in a certain area suffering from severe disturbance will take place in that area, and the entire regional ecosystem will move into a vulnerable state. Based on the relationship between man and the environment, guided by ecological economics, environmental economics and theories of sustainable development focused on human economic activities, covering the incompatible development process between the economy and the environment in ecologically ecological vulnerable regions (Heping et. al., 2006).

In many countries, there is an urgent need to stimulate socio-economic development, overcome crises and more effectively use the potential of regions for which special mechanisms of regional policy are applied. A regional policy aimed at balancing the activities of any regions, from large areas to small settlements, is considered successful. Since this can contribute to the solution of many important tasks, increasing the efficiency of the use of aggregate regional resources, creating conditions for increasing the efficiency of each region, increasing labor productivity, solving social problems, etc. At the same time, one of the main goals of regional policy is to overcome the vulnerability and depression of the economy, which is achieved by resolving the problems of many regions. Moreover, at the regional level, the tasks of ensuring the integrated development of the territory can be solved, specific measures and mechanisms for linking them to problem regions can be concretized and developed.

In general, the development of economic mechanisms to support strategically important settlements is important from the point of view of smoothing out interregional differences, which can only be achieved by considering the application of measures to a specific region. In addition, the need to reform the policy of regional development of Kazakhstan is caused by several basic prerequisites.

First, the economic situation of different social groups in the regions differs, which can have a significant impact on the social well-being and protest moods of the population. Unfortunately, in this recent period, significant changes have taken place in Kazakhstan related to political issues and social instability in society, especially in problem regions. Yes, in January 2022. mass protests began in the western regions of Kazakhstan and spread to other regions and cities, which indicates the presence of social disproportions in society. As a result, there is an urgent need to support problem areas, since social disunity has significantly changed their structure and potential, revealed problems in vulnerability, especially in regions where there are no resources and materials to regulate these consequences.

Secondly, there is an inadequacy of the territorial distribution of productivity associated with the concentration of production and population in the most favorable regions of the country. This largely determined the depth and duration of problem processes, the stability of the depressive state in a significant number of regions of Kazakhstan. Many developing countries are experiencing similar problems, like Kazakhstan, which is a consequence of the vulnerability of the economy and the social sphere. Therefore, given the scale of the problem, it is necessary to especially raise the issue of a significant difference between regions, cities and villages in terms of socio-

economic and demographic indicators, and, consequently, a differentiated approach to equalizing social development.

Thirdly, the current regional policy of Kazakhstan, pursued in relation to backward regions, is selective in nature, i.e., it is associated with the development of a set of measures applied in relation to a particular region. In addition, the sample of regions does not consider social, economic, infrastructural and environmental factors. Some regions are developing steadily, independently solving emerging problems, others cannot solve problems on the way of their development and need support from the state. Such territories in the theory of regionalists are usually called problematic, that is, vulnerable and depressive.

In this regard, a very balanced and thoughtful regional policy is needed. For the successful implementation of the regional policy, it is necessary to create a system of organizational and economic mechanisms to overcome the vulnerability and depression of the economy and the social sphere of strategically important settlements in Kazakhstan.

2. LITERATURE REVIEW

A review of the literature on the topic of the vulnerability of the economy and the social sphere at the global level shows the comprehensiveness and long history of this economic concept, as countries always seek to protect themselves from internal and external fluctuations. In this regard, many scholars have conducted extensive research in the field of economic vulnerability. According to these studies, vulnerability means exposure to damage and instability. This concept became popular in the field of economics when studies were made of some small countries with low economic power and high risk in terms of economic performance (Amiri et. al., 2018).

The representation of regional risk using a systems approach (Holling 2001) has led to the identification of two descriptive categories of this concept: vulnerability and resilience, where risk is positively and negatively correlated (Graziano 2013). Recent studies on economic vulnerability show that countries' vulnerability in some economic characteristics is related to the degree of economic openness (Farrugia 2004), export concentration (Briguglio 1997) and dependence on strategic imports (Briguglio & Galea 2003).

Vulnerability studies play an important role in disaster research, which highlights the relationship between human society and the consequences of disasters, as well as measuring the ability to cope with disasters in different regions with different economies (Liu et. al., 2010).

The future development of the economy is facing serious challenges of the traditional way of development, so only building a well-coordinated relationship between the eco-environment and the development of the regional economy will avoid unsustainable development behavior, which was achieved at the cost of degrading the eco-environment and realize the harmonious development between the economy and the environment (Heping et. al., 2006).

The difficult conditions of the modern economy reduce the effectiveness of traditional tools of economic regulation. The debt burden of the regions is growing, forcing them to

cut spending on medicine and education, thereby reducing investment in human capital (Silvestrov et. al., 2018). The ideas of equalizing the levels of socio-economic development of regions have always been important and are regularly raised in modern conditions (Kireeva & Nurlanova 2018). At present, considerable attention is paid to the substantiation and deepening of the conceptual foundations for the implementation of the state policy of regional development. The modernization of the public administration system entails a redistribution of tasks, powers and resources at the central, regional and local levels, which will contribute to the effective interaction of regions and communities, increase the initiative and responsibility of public authorities in the region (Kolosovska et. al., 2020). A reasonable pragmatic state policy is needed to harmonize the system of regional economic interests (Koshanov 2011). It is necessary to understand whether and how effective policies can be formulated and implemented. However, policy development has often failed to consider the causal chain representing the actual driving force behind policy outcomes, and thus misunderstand the potential effectiveness of policy development for regions (Capano & Howlett 2021).

The regional economy must balance economic initiative and autonomy in terms of methods and means of its implementation (Gizatullin et. al., 2018). The regional development strategy should not be developed according to the model of the national strategy but taking into account the characteristics of the region (Bogoviz et. al., 2017). To do this, we offer appropriate economic mechanisms that allow selected localities of Kazakhstan to adapt to new modern challenges and get out of vulnerability.

3. METHODOLOGY

A number of foreign countries have already accumulated significant experience in classifying problem regions and choosing mechanisms to overcome their vulnerability within the framework of territorial policy. At the same time, the implementation of the policy of regional alignment of territories involves the development of a typology of strategically important settlements. Traditional vulnerability analysis methods calculate sub-indices based on disaster frequency, losses, economic impact, and population of each region, and then use the sub-indices to derive a composite regional vulnerability index (Liu et. al., 2010).

In Kazakhstan, the levels of vulnerability of the regions have not yet been determined, which determined the need for research in this area. We used system-structural and functional approaches, methods of empirical research, including observation, comparison, generalization, systematization, methods of analysis and synthesis, logical analysis, methods of regional studies, cluster analysis. To analyze the state, main trends in the development or decline of settlements in Kazakhstan and assess the influence of the main factors on the vulnerability of their economy and social sphere, we proposed an original methodology and algorithm for its application. The methodology was developed taking into account the peculiarities and difficulties of obtaining information in settlements, the algorithm for applying the methodology consisted of four steps using the SPSS program for data normalization and for cluster analysis.

Initial data for 2009-2020 for analysis by settlements of Kazakhstan were obtained from the statistical data of the Bureau of National Statistics, regional departments of

statistics, various electronic resources, etc. Based on the results of the analysis, development indicators were obtained: Zhambyl, North Kazakhstan, East Kazakhstan, Mangistau, Atyrau and West Kazakhstan regions, and depressive and vulnerable territories were identified.

The sample does not include large cities and agglomerations as the main "points of growth" and the least vulnerable to the influence of negative factors. The choice of these regions is due to the following:

1) the demographic situation is characterized by negative trends (decrease in population density, negative balance of migration, etc.);

2) these regions, according to a set of development criteria, are classified as depressive (the volume of industrial production per capita is below the average republican level, low incomes of the population, depletion of the resource base, high unemployment);

3) a high degree of deterioration of engineering and social infrastructure, unfavorable ecology;

4) the selected regions are border, geopolitically and strategically significant.

The construction of gradations of strategically important settlements on a scale of gradations was carried out based on data collection, sampling and processing. Thus, when developing economic mechanisms and measures to overcome the vulnerability of the economy of the settlements of Kazakhstan, we will consider the features of the types of regions identified taking into account economic, social, infrastructural and environmental factors.

4. FINDINGS AND DISCUSSION

According to our analysis, it was clear that in many settlements of Kazakhstan there are enough unresolved problems that require immediate solutions. One of such decisions is the policy of regional development. Regional policy is aimed primarily at achieving the goals and objectives of the socio-economic policy of the state. At the same time, part of the socio-economic policy of the state is aimed at the rational use of the country's resources, the distribution of productive forces, the development of the economic potential and the potential of its territories, considering their characteristics. At the same time, there are common goals inherent in regional policy - this is the development of the positive aspects of the region, not only for the development of the region itself, but also for the country, in order to improve the well-being of the population. For example, for foreign countries, the current regional policy is a tool that minimizes inequalities arising from socio-economic conflicts that hinder development in general. Thus, to reduce the gap in the socio-economic level in strategically important settlements of Kazakhstan, the main directions of development for 2022–2050 are proposed. The directions are more clearly presented in table 1, broken down into three periods: 2022-2030, 2030-2040, 2040-2050.

The provided directions for the development of the regional policy of the settlements of Kazakhstan for the period 2022-2050 are aimed at reducing significant disparities in the development of the regions. In general, the presented directions were divided by us into short-term, medium-term and long-term ones. In the first place are short-term directions, on the basis of which the current goals and objectives are determined, aimed at improving the economic and social situation in the region.

TABLE 1. The main directions for the development of the regional policy of the settlements of Kazakhstan for 2022-2050

№	Implementation period	Implementation period
1	2	3
1	2022-2030 (short term)	*Direction 1. Measures to overcome economic and social imbalances.* This direction implies the creation of a nationwide system of support centers capable of organizing the implementation of economic and social policy in the territorial context. *Direction 2. Creation of an economically efficient territorial organization of production.* This direction implies the creation of an economically efficient territorial organization of production, especially industry, and the formation of economically full-fledged territorial economic units. *Direction 3. Search and activation of internal resources of strategically important settlements.* This direction is intended for the specialization of the region, i.e. on the features of the area that need to be developed, which will contribute to increasing competitiveness and further development of the settlement.
2	2030-2040 (medium term)	*Direction 1. Economic independence of the regions.* This direction implies that the regions will independently make decisions of a different nature, which are aimed at improving the welfare of the population, as well as the development of the regions. *Direction 2. Creation of funds for the development of regions, industries, as well as for improving the social conditions of citizens living in settlements.* This direction implies the creation of funds by the state, as well as with the participation of other developed countries to improve the economic situation, the social sphere of regions and settlements. For example, it is proposed to create a fund for financial support of regional entities that may have their own sub-funds. Sub-funds of the regions will be designed to reduce and eliminate differences in development in the regions. The Fund will provide financial resources to complement and pool existing development flows in designated areas to: - fill critical gaps in local infrastructure and other development needs that are not adequately met by existing inflows, - to strengthen municipal governance to this end through better capacity building to facilitate participatory planning, decision-making, implementation and monitoring, taking into account local needs, - provide professional support to local authorities in planning, implementing and monitoring their plans, - increase the efficiency and performance of the critical functions entrusted to municipalities and counteract possible losses in efficiency and equity due to insufficient local capacity. *Direction 3. Stimulation of the internal potential of strategically important settlements through government programs, business representatives and established development funds.* This direction is intended to improve the economic and social situation of the settlement through the stimulation of internal potential, for which business investments will be used, as well as support from the state through targeted development programs.

1	2	3
3	2040-2050 (long term)	*Direction 1. Maximize the income gap between urban and rural populations* This direction is intended to increase the incomes of depressed localities through the support and development of SMEs, creating highly paid jobs. *Direction 2. Creation of a Crisis Management Agency in strategically important settlements* This direction implies the creation of an Agency that will analyze and monitor situations in settlements that are strategically important for the state. To prevent crisis situations in them, where they will also train the specialty of regional anti-crisis managers. *Direction 3. Stimulation of production, support for the development of high-tech and competitive products.* This direction is intended to develop productivity, support promising start-up projects and research projects in cooperation with research institutes, businesses and governments in communities to develop products and services that will be in demand in world markets.
Note: Compiled by authors		

The second place is occupied by medium-term directions of development carried out in the process of preparing government development programs for the medium term. At the last stage, there are long-term directions that are worked out and adjusted during the implementation of the first two stages, where the main, large-scale directions for improving the regional system are determined. The purpose of this policy is to improve the quality of life with the help of tools and mechanisms of selective leveling regional policy and its priority areas. In this regard, the development of production and the formation of territorial economic units will not only increase the economic significance of the region, but also improve the standard of living of the population. It will also give a big boost to the realization of domestic resources, both human capital and natural resources.

The main goal of the state is not only to reduce the gap in the socio-economic indicators of depressed settlements, but also that today these settlements are sources of economic growth. Because, they have significant resources that are not used or used for other purposes or inefficiently. Therefore, the development of depressed settlements is not only a part of social policy, but also a stimulating element of economic growth policy. The new regional policy of Kazakhstan should be based on market mechanisms, the purpose of which is to stimulate and encourage domestic growth. This implies that it is necessary to use the resources of depressed settlements to the maximum. Today, state support should be directed to:

- development of local enterprises that are able to compete;
- formation of regional clusters;
- exchange of knowledge between small and medium-sized companies for the development of innovation in the locality.

Based on the study, the following areas with depressed and vulnerable settlements were identified: (1) in the Mangistau region: Karakiya, Beineu districts, and the city of Zhanaozen; (2) in the Atyrau region: Makhambetsky, Isataisky, Kzylkoginsky, Indersky and Makatsky, Kulsary; (3) in the West Kazakhstan region: Taskalinsky, Chirlatausky, Karatobinsky, Syrymsky, Zhangalinsky, Bokeyorda, Zhanibeksky and Terektinsky; (4)

in the East Kazakhstan region: Abay, Katon-Karagay, Kokpektinsky, Kurchumsky districts, Ridder and Semey cities; (5) North-Kazakhstan region: Akzhar, Mamlyut, Shal Akyn, Ualikhanov districts, Sergeevka and Mamlyutka; (6) in the Zhambyl region: Sarysu, Talas, Moyinkum, Zhambyl districts, Zhanatas and Karatau. Socio-economic problems, lack of resources, low level of industrial production and lack of state support have led the listed settlements to vulnerability and depression.

There is a significant disparity between settlements in the regions of Kazakhstan on factors such as the level and quality of life. Most of the regional problems faced by the most vulnerable communities are widespread and systemic. To solve such problems, a general overcoming mechanism is needed, then the package of measures will be narrowed depending on the locality. However, one should not forget about the peculiarities of settlements, therefore, the specific mechanisms of complementarity, which are described in Table 2, should be further considered.

TABLE 2. A package of system proposals, recommendations and forecast development scenarios

№	Region group	A package of system proposals, recommendations and forward-looking development scenarios
1	**2**	**3**
1	Mangistau region (Karakiyansky, Beyneusky districts, and Zhanaozen city)	- stimulation of investment activity through state support for small and medium-sized businesses, property support for medium-sized businesses; -development of bioeconomy in the agro-industrial complex sector; -integration of higher education with the private sector; - provision of targeted social assistance; - launch of large infrastructure projects; - increasing the availability of credit resources, regional special programs and state guarantees. *Development forecast:* The development of small and medium-sized businesses will create new jobs. Integration of the scientific environment with employers will increase employment opportunities and help reduce the negative dynamics of migration in the region. Employment among the population will increase, which will improve the socio-economic condition of the region.
2	Atyrau region (Makhambet, Isatai, Kzylkoginsky, Inder and Makat)	- investing in small business; - support for start-up projects; - provision of targeted scientific grants; - commercialization of scientific results. - relaxation of regulatory requirements. *Development Forecast:* The development of entrepreneurship will help increase employment among the population and influence the industrial development of the economy in the region. Increasing the attractiveness of universities through close cooperation between the private sector and universities will help to solve the shortage of specialists in various fields. The use of targeted grants will help develop individual sectors of the economy that are specific to each region.

1	2	3
3	West Kazakhstan region (Taskalinsky, Chirlatausky, Karatobinsky, Syrymsky, Zhangalinsky, Bokeyorda, Zhanibeksky and Terektinsky)	- stimulating investment activity through state support for small and medium-sized businesses; -development of bioeconomy in agriculture; - provision of targeted scientific grants; - opening of technical universities; - relaxation of regulatory requirements; -regional specialization: development of the agro-industrial complex. *Development forecast:* Investing in small and medium-sized businesses, the development of bioeconomy will increase economic activity in the region, increase the attractiveness of universities. The development of the economy will be observed in two main sectors: agro-industrial complex and agriculture.
4	North Kazakhstan region (Akzharsky, Mamlyutsky, Shal Akina, Ualikhanovskiy districts, Sergeevka and Mamlyutka)	- regional specialization: development of the agro-industrial complex; - targeted scientific grants; - partial decentralized management of the local budget; -integration of higher education with the private sector; - increasing the availability of credit resources, regional special programs and state guarantees; - relaxation of regulatory requirements. *Development forecast:* There will be an active development of the agro-industrial complex through the development of a key sector of the economy, inclusion in the processes of stable industrial development.
5	East Kazakhstan region (Abai, Katon-Karagai, Kokpekta, Kurchum districts, Ridder and Semey)	- assistance in the formation and development of small businesses; - provision of targeted social assistance; - regional specialization: development of the agro-industrial complex; integration of higher education with the private sector; - partial decentralized management of the local budget. *Development forecast:* Stable industrial growth will be observed, thanks to the development of such key sectors of the economy as livestock breeding, the agricultural sector of the economy, livestock breeding, and biotechnology. There will also be a decrease in the budget deficit.
6	Zhambyl region (Sarysu, Talas, Moyinkum, Zhambyl districts, Zhanatas and Karatau)	- investing in small businesses and developing business incubators; - targeted scientific grants; - regional specialization: development of agriculture. *Development forecast:* New jobs will be created. Depending on the regional policy, the key sector of the economy of the Zhambyl region will develop - this is agriculture. This allows the development of various branches of agriculture: crop production and animal husbandry.
Note: Compiled by authors		

The main package of system proposals, recommendations and predictive scenarios for the development of important settlements is proposed to be comprehensive. First, in many regions there is a decline in industrial production. Secondly, there is a decline in the

quality of life of the population, which is caused by several factors: a lack of jobs, an underdeveloped economy in the regions, and migration. Thirdly, the low growth of the local budget, which is the basis for the development of the area.

To overcome the above difficulties, the following regional mechanisms are proposed.

In strategically important settlements of North and East Kazakhstan, there is an acute shortage of the budget. The budget regulation system should be aimed at increasing the budget fund, within the framework of sustainable development, which in turn will ensure the growth of economic potential. Sustainable development and an increase in the local budget can be achieved through the development of the economy in the regions. In this direction, it is necessary to develop entrepreneurship, namely small business. This will ensure the implementation of human capital and increase the economic activity of the population. In addition, it is necessary to introduce a partial decentralized management of the local budget. It is recommended to provide for the direction of tax payments for small businesses and entrepreneurship to the local budget. And also, to direct funds for the development and improvement of local infrastructure and for the needs of the region. Thus, the interdependence of social and economic prosperity appears. This will increase the transparency of doing business.

Considering the fact that in some settlements of the West Kazakhstan, East Kazakhstan, North Kazakhstan and Mangytsau region there is a negative dynamic of migration among the local population, it is necessary to increase the attractiveness of the region. It may also depend on a poorly developed system of higher education. It is necessary to develop the scientific environment in the regions by allocating targeted grants. This will increase the attractiveness of higher education in localities and improve the quality of human resources, and thus will have an impact on the professional qualifications of the local population. It is necessary to use the experience of developed regions in the country and increase the collaboration of local universities. Also, the possibility of opening branches of the country's technical universities in West Kazakhstan region to prevent the migration of young people to other cities. And in the North Kazakhstan region, the opening of an agricultural university, since this region has a great potential for the development of the agricultural industry. There is also a need to retrain existing labor resources.

The development of new technologies and innovations based on scientific research and the attraction of business, depending on demand, will enable the invention and production of products in industrial regions that will be globally competitive. Thus, attracting foreign capital to strategically important settlements.

5. CONCLUSIONS

In order to cover a large proportion of the population with social protection in vulnerable regions, accelerated and expanded growth in employment and benefits in the formal sector, as well as an effective health care and education system, is required. As practice shows, in developing countries and countries with economies in transition, there is a limitation in the formal sector of employment. Since vulnerable segments of the population are more often unemployed, they are either part-time (not full-time) or self-employed. Here we can note the impact of economic crises that are a consequence of

various situations in the world, such as the COVID-19 pandemic. Therefore, many countries are striving to solve the problems of not only indirect and direct impacts that provide income and protection for the population, but also regional problems on the ground. In several countries, and primarily in Europe, significant experience has already been accumulated in stimulating and leveling the level of social development of the territory by providing selective support to individual regions.

Based on the foregoing, we can summarize the following, that the same mechanisms do not always work in the same place. To overcome the identified problems, it is necessary to consider all the nuances of the settlement, for each settlement individual mechanisms for the short, medium and long term should be formed. And there should be clear control and monitoring of the implementation of these mechanisms to correct it in time if a failure is detected. Also, the country's development programs provide for different mechanisms to achieve the goal, and they must complement each other in different indicators, that is, there must be points of contact. Only interaction between programs and state, regional, local authorities with the participation of representatives of the private sector and the public, as well as the scientific community, can achieve positive results.

The implementation of these mechanisms will enable strategically important settlements to develop and improve the well-being of the population. It will also ensure the country's food security, which is a particularly topical issue due to the difficult geopolitical situation in the world.

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